Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

Vol. 53, No. 6.
WHOLE No. 891.

RICHMOND, VA., SEPTEMBER, 1926

20 CENTS A COPY
$2.00 A YEAR

Original Communications

THEORIES UNDERLYING THE TREATMENT OF MALIGNANCY AS APPLIED TO GYNECOLOGY.*

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It is not the purpose of this paper to present any elaborate review of the subject of cancer, but in a brief way to state some conclusions at which I have arrived as a result of personal observation and experience.

A casual review of operations for cancer, particularly of the cervix, is interesting. I can remember when amputation of the cervix was seriously advised as a cure for cancer. It is doubtful if any case of cancer was ever cured by this means. When the futility of this operation was appreciated, the tendency was to make the operation more and more extensive. Starting first with vaginal hysterectomy, abdominal hysterectomy became next the operation of choice, and this was followed by the elaborate dissection which bears the name of the originator, Wertheim. This last operation never, however, became popular, due partly to the primary mortality attending the operation but also to the intrinsic difficulty and tediousness of the operation itself. The results obtained, however, in those patients who survived the operation, undoubtedly were better than those obtained by the ordinary abdominal hysterectomy. But the number of recurrences following operation has always remained very high, so much so that surgeons of wide experience have challenged any one to produce a case that had been permanently cured of cancer of the cervix by operation. There have been, however, such cures and I can produce a few patients from my own records who have been operated over five years ago and are still living and in excellent health. These cases followed the Wertheim operation. The tendency to recurrence is, however, distressing, and by far the most common seat of recurrence is in the stump, that is to say a local recurrence. The reason for this is quite easily explained. In carcinoma of the cervix the extension is along the lymphatics which run through the base of the broad ligament. A contemplation of the anatomy at this point makes it quite obvious that it is impossible to make a wide excision unless the Wertheim operation is done. The extension in this region is early and any operation performed where the tissues are cut through close to the cervix, as is the usual technique, is more than liable to leave undetected cancer cells behind. This explains why it is that carcinoma of the fundus has given such excellent results from operative treatment, while in cancer of the cervix the results have been so discouraging. In the one case the distance and indirect connection with the lymph channels means safety, while in the other direct relationship and close anatomical connection is a source of danger that is very difficult to overcome.

As a matter of fact, operation for carcinoma of the cervix fell into grave disrepute, and other means were looked for in an attempt to substitute something better. Cauterization by heat was found to secure very excellent primary results, and this was particularly true with the use of the Percy cautery. I was very much encouraged by the results secured by this latter method, and it was quite remarkable to be able to treat a case with the Percy cautery and observe how the entire uterus would shrivel down to a fibrous cord without any apparent vestige of the malignant growth. However, I have never known of a case in my own experience where recurrence did not take place, usually after a period of about six months. With the advent of radiation, however, using this term to apply to radium and X-ray therapy, very much better results were secured. In fact, the results were so good that the question naturally arose as to whether or not operation was ever indicated. While I have personally seen remarkable results and am quite an enthusiastic believer in the virtues of radiation, I have to confess, after hav-

*Read before the South Piedmont Medical Society at Danville, Va., April 20, 1926.

ing secured most remarkable primary results, that the cases of recurrence or recrudescence are disconcertingly large. We must not lose sight, however, of the fact that any case of cancer left to itself is fatal in one hundred per cent, and that cases cured at all are so much to the credit of the treatment. Still we continually try to increase the number of permanent cures.

It has been my observation that radiation secures its most remarkable result in the more rapid growing and soft cells. Malignant disease of the bone gives very poor results from radiation, while, on the other hand, soft rapidly growing tumors appear to melt away under its influence. I think we have all seen cases of inoperable abdominal carcinoma presenting large masses that would melt away under radiation but which were never cured. The theory that I derive from this is that the extension of the carcinoma if radiated in its early stages is particularly amenable to this form of treatment, whereas the original focus is difficult to stamp out. If, then, we have an agent that will take care of the extension when the cells are young and in their most vulnerable stage, we have a wonderful adjuvant to operative treatment. The operation removes the original focus, which is a most difficult thing to do by any other means, while the extension is taken care of by radiation. I believe that in this conception of the treatment of malignancy we are going to get our best results.

The question is a big one at the present time, more so than ever before. As a result of the intelligent cancer education that has been going on for some years, I find that more and more women are coming to me to determine whether or not they have a cancer, because they know as well as any one what the primary symptoms and danger signals are. In this way, I am seeing more and more very early cases of cancer. When the cancer attacks the cervix and we have a condition where the disease is limited entirely to the cervix without any apparent extension, the question arises very acutely, what shall we do with this case; shall we use radium or shall we operate? While one case means nothing, I happened several years ago to have just a case of this sort and decided in favor of radium. The case went on to an apparent complete cure. Relatives who were interested in the case took her to another surgeon for his unbiased opinion. He pronounced the case entirely cured. Notwithstanding this, she subsequently developed a rapid recrudescence and died from the cancer. Since then I have, when in doubt, operated, but I operate in conjunction with radiation. The technique which I use is, first, radiation of the pelvis by deep X-ray therapy. This is given in rather strong doses, sometimes giving one exposure, in other cases two. This is followed by a prompt operation, doing the usual pan-hysterectomy. When the patient gets over the operation, she is subjected to a series of X-ray treatments.

While the number of cases is as yet small, the results obtained so far have been most gratifying, and I feel that in this method of treatment we have the best solution so far for the treatment of cancer of the cervix when seen in the operable stage. In inoperable cases, radium, I believe, gives the best results for the cervix, deep X-ray therapy for intra-abdominal conditions. In a case of primary carcinoma of the ovary seen about eighteen months ago it was found on abdominal exploration to have extended and infiltrated all of the other organs of the pelvis. Diagnosis was confirmed microscopically. Notwithstanding this hopeless condition, which ordinarily would have meant death in a very short while, she was given deep X-ray therapy. At the present time she has no pain, is feeling well in every way except for the effects of the menopause, and in every way appears to have made a good recovery. She has, however, a mass that can be palpated by bimanual examination and which undoubtedly represents the original focus of the disease. However, she has had at least a year of good health although eventually she will probably succumb to this malady.

I would like to say something about diathermy but our experiences have been too short up to the present time for us to report. We have, however, had some rather interesting experiences with favorable results so far in carcinoma of the vulva.

The following conclusions express the intent of this paper:

1. It is not wise to build all of our hopes on one form of treatment alone. Often in the combination of treatments different aspects of the case are met and the final results improved.

2. The removal of the original focus, where possible, is always desirable, and it can best be done by surgery.

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3. Radiation finds it most useful field dealing with the early implantation of cancer cells. It is, therefore, particularly applicable to the extension of the disease, and in a prophylactic way stamps out hypothetical cells which cannot be detected.

ETIOLOGY OF APPENDICITIS—ALL FORMS.*

By E. L. LAWRENCE, M. D., Roanoke, Va.

It is the strong belief of Sir Henry Gray that at least 75 per cent of cases of inflammation of the appendix, whether acute or chronic, are due to anatomical conditions which result from excess or failure of what he had primarily called "developmental or physiological fusion of the viscera in its neighborhood."

The appendix varies greatly in the position which it takes up in the abdomen. While it frequently occupies the position ordinarily ascribed to it in relation to the cecum under McBurney's point. it may be tucked away under the lower part of the mesentery, or behind the ascending colon, or up under the liver. Indeed, it may occupy any part of the abdomen.

As has been many times pointed out, the person with abnormalities of the appendix and adjacent colon usually has abnormalities affecting other abdominal organs, the effect of which in the appendix and other organs is felt throughout the body. Sir Henry Gray believes that a mobile cecum and ascending colon plus the developmental adhesions, which accompany that condition, are responsible for the great majority of cases of appendicitis, both acute and chronic.

He then states his theory is that (1) a dilated loose cecum and colon are very frequently the cause of appendicitis, because in association with them are developmental adhesions, which often limit the mobility of the appendix; (2) when any part of the bowel becomes affected by inflammation, either directly or indirectly, or by contiguity, its activities tend to cease and the affected part becomes unduly dilated.

When, during development, the cecum "hesitates" under cover of the liver before descending to the right iliac fossa, it contracts adhesions there, or rather the omentum, which is attached to it, does. These adhesions are drawn out, as the cecum descends, into the thin filmy structure known as Jackson's membrane or veil. If the appendix projects from the cecum, horizontally under the liver, it is apt to be implicated in the sub-hepatic adhesions which then retard its descent to a greater or lesser degree. The more powerful or heavier part of the bowel, headed by the cecum pushes on and usually reaches the iliac fossa.

The appendix is then found to be hung by adhesions which usually plaster it on to the posterior or anterior aspect of the cecum and ascending colon, although sometimes it quite frees itself while the attachments of the meso-appendix hold it in the retrocolic position.

In discussing the anatomy of the appendix as related to acute and chronic appendicitis, Dr. George M. Crabb (Iowa) calls attention to the fact that the dissecting room idea, and the one most frequently given in the standard text-books on anatomy, is that the appendix hangs free from the lower end of the cecum, in the right iliac fossa, and that its chief function is to become periodically inflamed, finally to rupture and be the source of a general peritonitis, unless removed after an accurate diagnosis.

In his investigations and observations regarding the anatomy of the appendix, Dr. Crabb is pleased to have found support for his own conclusions, which do not entirely agree with the generally accepted text-book descriptions. He has found that a great many, in fact a majority of the appendices, do not hang free from the lower end of the cecum, in the pelvis, but are located behind the cecum, either within the peritoneal cavity, or wholly outside the peritoneal cavity.

Gladstone and Wakely, of London, from their studies, confirm Dr. Crabb's impressions of the position of the appendix. The London observers made accurate observations and records of three thousand cases. They definitely explain the different locations in which they found the appendix. In their examination of these three thousand cases, in the operating room, post-mortem and dissecting room, they found that the whole three thousand fell into one of five positions, as follows:

1. Retrocecal or retrocolic—2,076 cases, or 69 per cent. This position includes those cases

*Read in a symposium on Appendicitis before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

where the appendix was free in the retrocolic pouch of the peritoneum, held in contact with the ascending colon by a short mesentery, adherent to the cecum or colon, and behind the cecum and ascending colon, but owing to the obliteration of the retrocolic pouch, entirely extraperitoneal.

2. The pelvic type—825 cases, or 27 per cent. In this type the appendix hangs free from the lower end of the cecum and, if long enough, may extend into the pelvis. It is in this type, in the female, that inflammatory processes in the appendix may affect the ovary or tube or, in case of inflammation in the tube and ovary, the appendix may be involved secondarily. This type may also involve the bladder or rectum and, in cases of inflammation, pelvic abscesses may develop, both in male and female patients.

3. In 56 cases, or 1.8 per cent, the appendix was in the lower part of the iliac fossa and was usually turned to the right. Should inflammation occur in the appendix in this position and an abscess form, it may penetrate the fascia into the iliac muscle, giving rise to flexion of the hip joint.

4. Anterior or pre-ilial position—27 cases, or 0.9 per cent. This type is uncommon. The appendix is directed upward and forward, to wards the anterior wall, or, if operated early, the appendix will be found surrounded by omentum, forming a tumor mass the size of a hen's egg which may be felt through the abdominal wall.

5. The splenic or post-ilial position—15 cases, or 0.5 per cent. This is a very uncommon position.

The embryological development of the appendix is taken up in detail and, according to these observations, the many different positions are explained, but even then, embryological development does not explain why 70 per cent of appendices occur in the retrocolic or retrocecal position. Whether these 70 per cent are in the normal or an abnormal position, the appendix is more apt to become inflamed, because of it, and is more likely to become diseased because of impaired blood supply.

Another factor, etiologically, in the production of appendicitis in the retrocolic position is the obstruction of the lumen of the appendix, due to the kinking of the appendix, either at its base or somewhere between the tip and the base. Because of these obstructions to the lumen of the appendix, fecal concretions, so often found in the inflamed appendix, are formed and there is little doubt of the part these play in the etiology of acute appendicitis.

Aschoff believes the streptococcus, either alone or associated with a slender curved Gram-positive bacillus, is the causal agent. McWilliams found 57 per cent with B. coli, 19 per cent with B. coli and streptococcus, 83 per cent with streptococcus alone in a series of 288 observation. Kelly found B. coli in the majority of his investigations.

The occasional appendices which showed no organisms on either examination, and yet were acutely inflamed, can probably be explained by the destruction of the invading organisms by the defense mechanism of the body, but only after they had done serious damage.

One striking feature is the similarity of the exudate in spite of the various organisms calling it out. The factors giving rise to a phlegmonous inflammation as against the ulcerative, for example, are not etiological, but must be sought for in anatomical peculiarities, or in the locations of the invading organisms. The mucosa is apparently much more resistant than the muscularis or serosa, and the infection often spreads in these layers outside the mucosa, so it is not unusual to find a lesion that appears phlegmonous in one section, to be ulcerative in another.

In 66 acute cases, all early lesions found were at the margin of the lumen. In his conclusions, Dr. Warren states that acute appendicitis may occur without symptoms; that acute appendicitis is not a specific disease due to one type of organism, for, like acute tonsillitis, acute endocarditis and similar infectious lesions, it may be caused by a variety of organisms.

PRE- AND POST-OPERATIVE MEDICAL TREATMENT OF APPENDICITIS.*

By J. D. WILLIS, M. D., Roanoke, Va.

The title of my subject in this symposium—Pre- and Post-Operative Medical Treatment of Appendicitis—presupposes a correct diagnosis. Unfortunately the diagnosis in appendicitis is often uncertain. There are some general rules which have been found that will

*Read in a symposium on Appendicitis before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

often safeguard the life of an individual suffering with appendicitis in its acute stage. These are equally applicable to other acute abdominal conditions prior to a certain diagnosis, and should be instituted whenever an acute abdomen is suspected, namely,—absolute rest, complete abstinence from food, the application of an ice-bag over the region of the cecum, or, in some instances, the application of hot fomentations. Purgatives, and in most cases enemata should be interdicted.

As soon as the diagnosis has been made, and while arranging for operation, it is safe to use enough morphine hypodermically to relieve the pain and quiet intestinal peristalsis. The only rational treatment for acute, suppurative, or gangrenous appendicitis is immediate operative intervention. When it has been concluded that subacute or chronic appendicitis exists and there are no special objections to operation, it is advisable to have the appendix removed.

Chronic appendicitis may be one of a group of intestinal infections, including the ileum, cecum and colon which follow from visceroptosis. Intestinal stasis and disturbance of circulation from visceroptosis predispose to a low-grade infection. Operation in such cases is rarely beneficial. Symptoms may be relieved by careful regulation of the bowels. This is best done by appropriate diet and exercise. Regular daily bowel habits should be carried out and if there should be any spasm of the rectal sphincter, it should be dilated sufficiently often to overcome the spasm. Large quantities of water should be consumed and abdominal exercise carried out. Intestinal lubrication and peristaltic stimulation by the administration of vaseline, liquid petroleum, agar or psyllium seed is often of great benefit. Injections of oil into the colon are occasionally of value.

I want to urge that the utmost care be taken to prove or disprove the presence of subacute or chronic appendicitis prior to resorting to surgical intervention, as I am firmly convinced that many innocent appendices have been removed and diagnosed pathologically as chronic appendicitis that were in no way responsible for the symptoms complained of.

Post-operative medical treatment varies somewhat with individual operators. Elevation of the head of bed in accordance with the severity of the findings and symptoms at the time of operation is agreed upon except where there is great shock. Opiates are justified in the early period after operation. Fluids are necessary and should be given by bowel until they are taken in sufficient amount by mouth. At present tap water, as suggested by Trout, given by the Murphy drip, seems to be most used. Water should be given by mouth as soon as the stomach will tolerate it. Bowel feedings may be necessary if for any reason it cannot be retained by mouth. Liquid nourishment by mouth can usually be given after twelve or fourteen hours.

If high fever should prevail, cool sponging should be carried out and an ice-cap applied to the head. In case of shock or toxemia, the patient should be kept warm in bed and it may be necessary to resort to intravenous injections of saline, or saline and glucose. At times it is advisable to add adrenalin to the saline. In severe cases of shock or toxemia, it may be necessary to resort to blood transfusion. If abdominal distention should become troublesome, it is often relieved by gastric lavage or high enemata, or both. the composition of the enema varying in accordance with the immediate indications. Soap-suds enema may suffice, or it may be neccessary to add turpentine, magnesium sulphate, ox-gall or alum. Pituitrin is used to good advantage in conjunction with enemata in distention.

In the acute form of appendicitis there is always more or less local peritonitis. In fact, the peritonitis may become general and severe. When this happens the clinical complex presents a more critical appearance, and treatment will be varied to meet immediate indications. Stimulation may be necessary and the drugs most generally used in accordance with immediate indications are strychnine, digitalis, camphor, spartein, and adrenalin.

SURGICAL TREATMENT OF APPENDICITIS.*

By NAT H. COPENHAVER, M. D., F. A. C. S.,
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In discussing the surgical treatment of appendicitis we are dealing with an organ of the abdomen which more than any other undergoes pathological changes. In spite of this fre-

*Read in a symposium on Appendicitis before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

quency it still holds, and rightly so, the respect of every thoughtful physician. The mortality from appendicitis alone in the United States, quoting from Willis, is about 16,000 yearly.

Appendicitis is no respecter of persons; it occurs in all walks of life, and at all ages, but its greatest toll is in the young, and for this reason it behooves us as a profession to do our utmost in every way, by educational propaganda, better diagnoses and surgical technic, to lessen this evil. It is appalling to realize that the annual deaths from appendicitis are equal to all of those from salpingitis, pelvic abscess, ectopic pregnancy, gall-stones and surgical diseases of pancreas, spleen and thyroid. Economically, the present loss cannot be estimated. How gratifying to feel that a young life has been saved to do its allotted part in the economic development of the community. I do not feel that it would be putting it too strong or over-exaggerating to say that nearly all lives lost from appendicitis are thrown away and wasted; in an ideal state, very few deaths should occur.

The diagnosis and differential diagnosis have been ably discussed.

Chronic appendicitis alone, or associated with other diseases, such as cholecystitis, pelvic infections, gastric and duodenal ulcers, might be discussed at length but time will not permit; therefore, the contents of this paper will be confined to acute cases.

Given a diagnosis of acute appendicitis or an acute abdomen, for, in many instances, that is as far as human knowledge will allow us to go, the surgeon is then called upon to give an opinion.

Many factors must be considered before such an opinion is rendered. Because of this there have arisen two distinct schools: those who believe an operation should be performed in every case as soon as a diagnosis is made, and, secondly, those who are more conservative and feel that in the late cases operation should be postponed. The slogan, "Too late for an early operation and too early for a late operation," is well known to us all. It is important to remember that no hard and fast rule can be adopted for the late cases, for time is by no means the only factor. Much depends upon the study of all the facts and circumstances of each individual case.

Temporizing is notoriously unsafe in children and old people whose resistance to infection is much below that of the adult in middle life.

Much responsibility, therefore, falls upon the surgeon. The operation, when decided upon, should be performed in a few minutes with the minimum of disturbance of the intestines and peritoneum and the least amount of anesthesia. Too much emphasis cannot be put on gentleness. Speed without respect for tissues is dangerous. A combination of experience, judgment, skill and speed is priceless, and under these circumstances the risk of spreading the infection and lowering the resistance is slight.

In addition to the high mortality there is a high morbidity rate, such as prolonged drainage, fecal fistula, adhesions, subphrenic, liver or pelvic abscess. Prompt treatment of appendicitis is without morbidity. In cases operated upon within the first twelve hours, the mortality is practically nil; within the first twenty-four hours, the mortality is about 1 per cent.

Mortality occurs almost entirely among cases operated upon between the second and fifth days, and here the mortality is confined chiefly to one class of cases, those showing evidence of generalized peritonitis, recognized by:

1. General abdominal pain.
2. Pain extending beyond the appendix.
3. Pain, and at times dullness, in flank.
4. Abdominal distention.
5. Rapid pulse and shock.

As before mentioned, time is only one factor to be considered in deciding on an operation. A mild case or a subsiding case, without any evidence of peritonitis or abscess, may as safely be operated upon on the fifth day as on the first.

In my experience all late cases showing evidence of a beginning peritonitis are best treated medically. Such treatment consists in:

1. Absolute quiet in bed, placed in the Fowler position with ice-bags to abdomen.
2. No fluids by mouth. Fluids to be given only by hypodermoclysis and proctoclysis.
3. Opiates in sufficient amount to keep patient quiet and to arrest peristalsis.

Usually about the fifth or sixth day the temperature drops and then operation should be performed at once. Longer delay, especially in the young and old, subjects the patient to danger of general sepsis.

There are a certain percentage of patients with peritonitis who do not respond to such treatment. If, after a week of expectant treatment, the patient does not improve, an operation under local for drainage alone without any attempt to find or remove the appendix is justifiable and may prove beneficial.

In England, Rowland reports from Guy's Hospital a mortality of less than 1 per cent for cases operated upon within the first twenty-four hours of onset. In late operations the mortality was at least 3.5 per cent and as high as 10.5 per cent for operations performed on the third and fourth days.

Love found the mortality in 341 delayed operations to be 3.5 per cent, which compares very favorably with that of 103 operations carried out on the third and fourth days with over 10 per cent mortality, or with that of 1,677 immediate operations, including both early and late cases, which showed a mortality of 5.8 per cent. He also found that the complications in all the late cases treated expectantly were 6.7 per cent, compared with 11.9 per cent in the late cases subjected to immediate operations.

Deaver and Magoun, in reviewing 5,488 appendectomies performed at the Lankenau Hospital, Philadelphia, found that the mortality within the years of 1901 to 1905 was 10.5 per cent.

In the next four years, within which period the Fowler-Murphy-Ochsner treatment was instituted. the mortality fell to 5.6 per cent. Beginning in 1910, when all cases of spreading peritonitis were treated by the expectant method, the mortality fell to 3.7 and 4.2 per cent, respectively, for each five year period.

From the above statistics, medical treatment of the late cases of peritonitis certainly seems to offer the patient most. Suffice it, however, to say that the mortality at best is too high, and compares very unfavorably with the mortality of 1 per cent in early cases operated upon within the first twenty-four hours. Early diagnosis and quick surgical interference will reduce our mortality to a minimum and entirely eliminate the morbidity.

It is not always easy with the abdomen open to verify the pre-operative diagnosis, assuming it to be correct. An appendectomy is generally looked upon by the profession and laity as a simple procedure, though it may in the hands of the most skilled prove very difficult.

The appendix may be buried in either the ileo-cecal or sub-cecal fossa. Confusion also may arise when the appendix is retro-cecal or retro-colic. Identification of the ileo-colic and ileo-cecal folds, following the latter to the meso-appendix and appendix saves time and avoids confusion. Quoting Deaver, "Anatomical landmarks, particularly in the presence of a clear horizon, should make recognition very clear and, in the presence of a foggy atmosphere, give confidence and help which facilitates operative procedure and therefore makes it safer."

The type of incision to be used is one of personal preference. The Grid Iron incision allows for very little exploration and should, therefore, be confined for the most part to typical cases of appendicitis in children where intercurrent diseases are much less frequently met with.

Various drainage devices have been advocated. Adequate and free drainage is essential, and whether we use rubber tubing, glass tubing, or the Penrose drain with gauze, is a matter for the surgeon to decide. In all free drainage cases, the dressings should be changed often. A well soaked dressing retards rather than facilitates drainage. This point is emphasized by Sistrunk, who advocates changing the dressing every hour in all cases of peritonitis where good drainage is imperative.

Post-operative treatment is better standardized, and in the main consists in:

1. Administration of an adequate amount of fluids, 2,500 or 3,000 c.c. daily.
2. Morphine.
3. Starvation until peritonitis has subsided.
4. Gastric lavage.
5. Frequent examinations for secondary abscesses.
6. No catharsis.

Of these, the administration of large quantities of fluids and gastric lavage are perhaps the most important as well as the most neglected. The passage of the stomach tube is repulsive to the patient and for this reason is oftentimes neglected.

The more common complications after operation include shock, hemorrhage, peritonitis, mechanical obstruction, paralytic ileus, secondary abscesses, and, during convalescence, pulmon-

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ary embolism, phlebitis, acute cardiac dilatation and pneumonia.

Obstructive symptoms may occur a few hours following an operation, or they may occur a week or ten days following an apparently normal convalescence. Following general peritonitis, plastic adhesions may occur to cause kinking of the small intestine anywhere along its course. In cases of obstruction in the jejunum regular and repeated washing of the stomach may reduce the toxemia very perceptibly. Draper has shown by animal experimentation the great danger of the retained secretions of intestinal loops, particularly in the upper abdomen.

Mechanical obstruction and secondary obstruction or paralytic ileus are of the above mentioned complications the most dreaded. In such cases palliative treatment and temporizing on the part of the surgeon is justifiable for two or three days in the hope that the condition is temporary or that he is mistaken in the origin of the symptoms. Beyond this, the condition is made more serious by waiting, and then it is that an enterostomy becomes an operation of expediency and necessity. C. H. Mayo says, "The inestimable value of enterostomy, when the operation is indicated, is apparently not fully appreciated by the medical profession. Certainly the prompt relief secured when it is made either for alimentation or for the relief of obstruction is so immediate and effectual that the slight hazard and simplicity of the operation should not weigh in the balance in leading to delay in its application. The operation is of greatest importance in relieving obstruction which occurs within a few days after a laparotomy."

It is agreed if the obstruction is easily located and can be relieved at the primary operation, it is best to do so. Oftentimes, however, a formidable operation is out of the question, and it is in this type of obstruction, when the patient's condition is already serious and the resistance lowered from recent laparotomy, that enterostomy performed under local anesthesia proves to be of life-saving value. When done in early cases, the results are very gratifying. Within a few hours the whole picture will change. The distention and pain will disappear, the pulse will slow and the anxious, observing facial expression of anguish will change to one of quiet and comfort. Thus, the crisis passed, secondary operation for relief of the obstruction may be performed if necessary a few days later.

In such cases the surgeon's anatomical knowledge is often put to the test. He may be confronted with the necessity of distinguishing a loop of small intestine and, as an aid to this, I wish to quote from W. J. Mayo:

"The small intestine, originating in six primary convolutions on the right side, has its mesentric attachment from left to right, from above downward, passing behind the umbilicus. This is the reason why in obstructive and other disturbances of the small intestines, unless localized by involvement of the peritoneum, the pain is referred to the vicinity of the umbilicus, although the cause of the pain may be in a loop of intestine at a distance. In picking up a loop of small intestine, it is some times difficult to determine which direction is up and which is down. Monks, in a beautiful piece of work, has shown how this can be done with facility. If a loop of intestine drawn out of an abdominal incision is held by the assistant and the surgeon, grasping the intestine with the fingers on one side and with the thumb on the other, passes down to the bottom of the mesentery, and finds that his fingers and thumb still grasp the root of the mesentery as started above, the anal end is down: but if the hand is reversed at the base, then the direction is the opposite. In picking up a piece of small intestine one should be able to recognize the part of the bowel from its appearance. The upper jejunum is thick and wide, the mesentery is thin, and the vessels are large, long and straight, having but one or two primary arcades close to the base. In the lower ileum the intestine is thin and the mesentery thick, the fat sometimes following the vessels a little way up along the intestinal wall. The vessels are smaller, shorter and there are a number of arcades, sometimes two, three or four in the adjacent mesentery. Attention to these details makes ready differentiation possible."

In conclusion, the following points should be stressed in the spirit of constructive criticism:

1. Appendicitis is on the increase and unlike, for example, kidney and thyroid surgery which previously carried a high mortality but has very materially decreased in recent years,

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the mortality from appendicitis has increased.

2. Economically the loss from appendicitis is enormous, the largest number of deaths occurring in children and young adult life.

3. Early diagnosis and prompt surgical interference and the strictest post-operative vigilance will reduce the mortality to a minimum and practically eliminate the morbidity.

4. Appendicitis is common, and the removal of a simple appendix may require very little surgical training or skill; however, the fact remains that it is often very difficult and the post-operative treatment alone may tax to the limit the ingenuity and judgment of master surgeons.

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Monks, Quoted by Mayo, W. J.

CARCINOMA OF THE PANCREAS.*

By WM. H. HIGGINS, M. D., Richmond, Va.

On account of recent studies on the pancreas there has been a renewed interest in the diseases of this organ. In view of the fact that a disease or disturbance of function of this gland is usually attended by gastro-intestinal disorders, the general practitioner is logically in a position to see these cases in their incipience. The recognition, however, of these pathologic changes is not always readily accomplished.

The facts that the pancreas is comparatively inaccessible, and often shows no definite evidence of impaired function even in the late stages of disease, are the chief difficulties in reaching an early diagnosis. Because of these peculiar circumstances, carcinoma of the pancreas is often recognized by its effect on adjoining structures, a condition which is apparent when we consider the anatomic relationship of this organ to the surrounding structures.

Since the pancreas has no capsule, its head lies directly against the duodenum and its anterior surface comes in intimate contact with the transverse colon. Its body also forms a considerable portion of the bed of the stomach and actually touches the pylorus. The tail is in contact with the spleen and lies adjacent to the left suprarenal gland of the left kidney. The head of the pancreas is only a short distance from the gall-bladder and ducts and the body lies directly over the inferior vena cava.

In spite of extensive studies on pancreatic functional tests, we have as yet no reliable laboratory procedures which can consistently give us any incontrovertible evidence of a diseased organ. The older methods of examining for excess of fat and undigested muscle fibres in the stools are still employed, but the fact remains that evidences of inflammatory or malignant disease of the gland may exist without producing tangible changes in the feces. More complicated tests are now being elaborated but are as yet too much involved to be efficiently carried out in the average laboratory.

The diagnosis, therefore, of carcinoma of the pancreas rests to a large measure upon the effect of the growth on the adjoining structures. On account of this close relationship to other abdominal organs, the symptoms and physical findings form no well-defined syndrome. There are, however, certain outstanding points in the diagnosis of this disease which occur with sufficient frequency to be of aid in the recognition of this condition.

This report is based on a clinical study of fourteen cases of carcinoma of the pancreas which have been recognized at St. Elizabeth's Hospital. All diagnoses were confirmed at operation or post-mortem examinations. Twelve of these cases entered the hospital during the last five years, which gives an incidence of 2½ per cent of all malignant diseases treated during that period.

In this series of fourteen cases there were seven males and seven females. The average age was 62, the youngest being 47 and the oldest 76. The duration of symptoms varied from three weeks to twelve months, the average being six months. The most outstanding symptom was *pain* which was present in the history of twelve of the fourteen cases. The character of the pain was significant: in some it was described as a sharp cramp-like stab in the right or left hypochondrium, occurring intermit-

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tently, but the majority complained of a more or less constant pain extending from the epigastrium to the back. Some forms of digestive disorder, such as *gas*, *nausea*, *lack of appetite*, etc., were present in ten histories, in five of which persistent *vomiting* was a prominent symptom. Contrary to the usual emphasis in text-books on the frequency of pancreatic diarrhea, only one case gave a history of *diarrhea* which alternated with constipation. In eight of the series *constipation* was a prominent factor. Studies of the stools were not made routinely, but the results in those examined apparently offered little assistance.

In all but four cases in this series *loss of weight* was a marked feature, varying from 20 to 80 pounds. In the absence of other evidence, this symptom carries with it considerable significance. *Jaundice* was present in eight cases, five of which were complicated by severe itching. In those cases where the lesion was located in the body or tail of the pancreas jaundice was not apparent.

In the abdominal examinations of these patients, six had a *palpable mass* located in the epigastrium, usually near the left hypochondrium. The mass was described as being firmly fixed, not painful and did not move on respiration. In five of the series there was episgastric *rigidity*.

The absence of glycosuria was striking. In only one instance was sugar present during the patient's illness. In Mayo's series of 138 cases of carcinoma of the pancreas, glycosuria was present in 10 per cent of the series. In one patient, symptoms of diabetes antedated evidences of malignancy by two years. The rarity of glycosuria in these cases is difficult to explain. Even when to the naked eye the entire gland appears to be extensively involved at autopsy it is uncommon to find sugar in the urine. It has been suggested that either the Islands of Langerhans are relatively immune to the neoplastic growth or a few remaining islands are sufficient to handle the carbohydrate metabolism. Glycosuria in the presence of pancreatic carcinoma means an extensive disease of the organ.

In one other case in our series, a patient, age 71, gave a history of diabetes for two and one-half years previous to her admission to the hospital. During this time her attending physician found her blood sugar at 250 mg. per 100 c.c. of blood and 10 grams of sugar in a twenty-four hour specimen of urine. She was placed on an adequate diet with satisfactory results.

On her admission to the hospital ten months later her urinalysis was negative and there was a persistent hypoglycemia averaging from 60 to 70 mg. of sugar per 100 c.c. of blood. An explanation of this reversal of events is not apparent, unless it was due to a state of chronic starvation resulting from an uncontrolled vomiting.

The operative findings in this series were conclusive and similar in many respects. In agreement with Courvoisier's law, the gall-bladder was found enlarged or distended in nine cases.

In the differential diagnosis of carcinoma of the pancreas, it is necessary to include all chronic lesions in the upper abdomen which are associated sooner or later with jaundice as well as those in which jaundice plays no part.

The most frequent disease to encounter in this group is common duct stone. The history of acute attacks of colicky pain felt deep in the right side and radiating to the back and right shoulder, usually accompanied by jaundice, without marked loss of strength and weight are characteristic features. The jaundice in these cases is not as a rule the deep olive green of malignancy and there is not the systemic break down generally found in the latter condition.

Chronic pancreatitis will sometimes closely simulate carcinoma of the pancreas. In these cases the patients are as a rule younger and their symptoms are characterized by less acute pains in the epigastrium, often associated with fever and a gradually appearing jaundice. The loss of weight and strength is not so persistent and striking as in carcinoma.

Cirrhosis of the liver may likewise share in a measure the clinical picture of a pancreatic lesion. Here we are likewise dealing with an earlier decade and, although the constitutional symptoms and digestive disturbances may be equally severe, there is not the same degree of pain or extreme grade of jaundice. The enlargement of the liver may be found equally pronounced in either condition.

In carcinoma of the gall-bladder, differential diagnosis is more difficult. Here a palpable tumor in the region of the gall-bladder may be found, jaundice is more or less persistent, and pain and loss of weight and strength in

advanced middle life are in common with the symptoms of carcinoma of the pancreas. In the majority of these cases, however, there is an antecedent history of gall-stone colic and the females are affected four times as often as males (Eusterman).

Carcinoma of the stomach or gastric ulcer share in a measure with some of the symptoms of carcinoma of the pancreas, but X-ray examinations usually separate these cases without difficulty.

Conclusions

A report of fourteen cases of carcinoma of the pancreas occurring at St. Elizabeth's Hospital is submitted.

The average age was 62 and the average duration of symptoms was six months.

The sex incidence was the same in both.

The chief symtpoms were *pain* in epigastrium and back, *jaundice*, *weakness* and *rapid loss* of *weight*.

The pain and gastric disturbances were not influenced by food or alkalies.

Constipation was a frequent symptom and, contrary to the usual text-book description, loose pancreatic stools were seldom found.

X-ray studies are of little value and laboratory tests are of only limited assistance in recognizing this disease.

COMMON EYE CONDITIONS SEEN BY THE GENERAL PRACTITIONER.*

By CHARLES A. YOUNG, M. D., Roanoke, Va.

Ophthalmia Neonatorum

Ophthalmia neonatorum is caused by the gonococcus in about 60 per cent of the cases only, the remaining 40 per cent being due to the pneumococcus, staphylococcus aureus, Koch-Week's bacillus, colon bacillus, diplobacillus of Morax-Axenfeld, streptococcus, influenza bacillus and the diphtheria bacillus. The symptoms appear from the second to fifth day following birth, with a rapidly developing and severe muco-purulent conjunctivitis.

Treatment is first prophylactic, using either Crede's method of instilling one drop of a 2 per cent silver nitrate solution in each eye, or, preferably, one drop of a 1 per cent silver nitrate solution in each eye, which is less irritating and just as efficient. It is true that the non-gonorrheal cases are not as a rule as severe as those due to the gonococcus, but it is to be remembered that at times the gonorrheal cases are sometimes mild and for that reason a smear should always be taken for microscopic study. After the disease makes its appearance and is unilateral, protect the good eye with a Buller's shield which is easily made by using an ordinary watch crystal and zinc oxide adhesive, leaving an opening temporarily for ventilation.

The eye, or eyes, if bilateral, should be irrigated every fifteen to thirty minutes day and night with a saturated boric acid solution. These cases require a special nurse, day and night, who must be instructed to be extremely careful in irrigating the eye, not to injure the cornea.

Injections of boiled milk should be used, beginning with 2 c.c., and repeating every forty-eight hours. The amount of milk injected should be increased, depending upon the severity of the reaction, usually adding 2 c.c. every other day up to 10 c.c., which is, as a rule, the largest dose required. The milk does not materially shorten the disease, but does decrease markedly the production of pus and also lessens the pain and discomfort.

Once a day it is well to paint the lids with a 2 per cent solution of silver nitrate, and follow with an irrigation of physiologic salt solution. Cold compresses to the lids continuously (when no corneal complications are present and the lids show no signs of poor circulation) relieve pain and lessen inflammation and edema. Personally I have never seen an eye lost from ophthalmia neonatorum if the cornea was unaffected when first seen.

Convergent Concomitant Squint

The eyes are first noticed turning in usually from the second to the fourth year of life. As one eye only turns in, the eye that squints will, from lack of use, soon develop an amblyopia which, if permitted to continue without treatment, will result in the permanent loss of acute central vision in the squinting eye. The two essential indications in a case of squint are, first and most important, the preservation of vision in the squinting eye, and, second, to straighten the squinting eye.

To preserve vision the patient must be seen as soon after the squint occurs as possible and always before reaching the age of six years. Before the age of six years vision can be preserved and developed by proper glasses, and, either by bandaging the non-squinting eye or

*Read before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

XUM

instilling atropine in the non-squinting eye, the squinting eye is compelled to function. From this forced exercise, the vision in the squinting eye will soon equal, if not surpass, that of the non-squinting eye, so that not uncommonly the squint is transferred to the opposite eye.

Straightening the eye from the parents' standpoint is the prime consideration, but from ours the second consideration. Glasses will straighten 60 per cent of the eyes, but if the glasses do not, you can at any time operate and straighten them, while no one can put vision in the squinting eye after the patient is six years of age.

Congenital Dacryo-Cystitis

Congenital dacryo-cystitis is not uncommon in young babies, and is caused by a failure of the lower extremity of the nasal duct to open, resulting in decomposition of the contents of the lachrymal sac and irritation of the mucous membrane of the lachrymal passages with the production of a muco-purulent discharge.

Parents first notice that the eye "tears" and, later, the presence of a muco-purulent discharge in the eye. The remedies ordinarily prescribed for a conjunctivitis have no curative effect, as the mechanical obstruction cannot be corrected by drugs. By making pressure over the lachrymal sac once or twice a day, the contents of the sac are forced through the canaliculi and punta into the conjunctival sac and in many cases the discharge is forced downward through the lower end of the nasal duct, thus relieving the stenosis and resulting in a cure of the condition.

Having tried the pressure treatment for one to two weeks without success, probing the lachrymal passage with a lachrymal probe will open the nasal duct and permit free drainage of the tears.

Chronic Dacryo-Cystitis

Chronic dacryo-cystitis is usually unilateral and first makes its appearance as a tearing in the affected eye, the tearing being worse in cold windy weather; later the contents of the lachymal sac, being mucopurulent, irritates the conjunctiva, resulting in a chronic conjunctivitis. The presence of a chronic unilateral conjunctivitis should always make us suspicious of a chronic dacryo-cystitis.

Pressure over the lachrymal sac causes a regurgitation of mucoid or muco-purulent material into the conjunctival sac. A simple method of ascertaining the patency of the lachrymal apparatus is by instilling a few drops of argyrol solution into the conjunctival sac, and, after waiting a few minutes, have the patient blow his nose; the stain of the argyrol will be seen on his handkerchief if there is no obstruction. A chronic dacryo-cystitis is particularly dangerous, as the pus usually contains the pneumococcus organism. The eye being at all times bathed in pus, the slightest injury to the cornea may result in a serpigenous ulcer, which means the loss of the eye, or at least an unsightly scar of the cornea with more or less reduction of vision. The extirpation of the lachrymal sac is the most satisfactory treatment, rids the eye of pus, permits the conjunctivitis to clear up and removes the potential danger of serpigenous ulcers. The tearing usually gives very little trouble and is always less than that present before removing the sac.

Glaucoma—Cataract

Simple chronic glaucoma is sometimes mistaken for cataract and the patient told to wait until he is unable to see or until the cataract ripens before consulting an ophthalmologist. The use of the ophthalmoscope will immediately show whether a cataract is present. When an ophthalmoscope is not used, the diagnosis is often difficult, as the two conditions often have the following symptoms in common:

1. Gradual loss of vision.
2. A grayish reflex from the lens by focal illumination.
3. Normal tension.
4. Absence of pain.

Glaucoma may occur at any age and is not limited to elderly people; furthermore, glaucoma often runs its course without pain or any noticeable rise in the intra-ocular tension.

Local Anesthetic

Instillations of butyn in 2 per cent solution is the anesthetic of choice for use in the eye as a preliminary to the removal of foreign bodies and for the relief of pain caused by ulcers and abrasions of the cornea. The advantages of butyn over cocain are:

Butyn

1. **Solution can be boiled.**
2. **Solution antiseptic.**
3. **Does not cause drying or roughening of the cornea.**

4. Does not dilate pupil.
5. Not under Harrison Narcotic Law regulation.

COCAIN

1. Solution cannot be boiled.
2. Solution not antiseptic and soon shows fungus growths.
3. Causes drying and roughening of the cornea.
4. Dilates pupil.
5. Under Harrison Narcotic Law regulation.

Butyn can with advantage be prescribed in castor oil (2 per cent solution) for its action in relieving pain and preventing adhesions (symblepharon) after burns of the conjunctiva with lime, ammonia, or acids.

Gill Memorial Eye, Ear and Throat Hospital.

BACILLARY DYSENTERY—REPORT OF A CASE.*

By
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With Laboratory Discussion

By
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Mrs. A., patient, white, 70 years old, was admitted to St. Elizabeth's Hospital on a stretcher, August 9, 1925. She complained of a severe diarrhea, tenesmus, fever, abdominal pain, and occasional nausea and vomiting. She had been treated for these symptoms for a period of six weeks at Hot Springs, Va., with no improvement. She had gradually lost weight and become very weak. Family history negative; past history essentially negative. She had lived in Virginia practically all of her life and had made no recent trips from Bath County.

Physical examination showed a slightly obese patient with signs of recent loss of weight, pale skin, and a moderately toxic appearance. There was moderate right nasal obstruction from enlarged turbinate. She was unable to hear whispered voice in either ear but could hear low spoken voice. Fecal breath and coated tongue. Pharynx was moderately injected; tonsils were small and cryptic, but contained no exudate. *Heart:* Apex impulse was palpated in the 5th interspace 11 cm. from mid-sternal line. Retro-sternal dulness was 7 cm. in the 2nd intercostal space. Pulse rate 110 to the minute. Radial and axillary vessels slightly palpable. First sound at the apex was of medium quality. There was an occasional extrasystole. Second sound at the base was slightly diminished. A soft systolic murmur was heard in the first and second intercostal spaces, and transmitted to the neck. Blood pressure 170 systolic and 80 diastolic. *Lungs:* Were apparently clear with exception of medium moist rales at both bases posteriorly, which had a tendency to disappear after expiratory cough. *Abdomen:* Pendulous, slightly distended, tympanitic to flanks. There was moderate general tenderness, more marked on the left side, with definite muscle spasm throughout the left side. There was a low mid-line scar which had healed satisfactorily. The liver and spleen were not palpable and not enlarged to percussion. *Extremities:* There was slight evidence of hypertrophic arthritis of the phalanges, skin was slightly dry; no tremor of fingers. *Reflexes:* Knee jerks normally present. No Oppenheim, Gordon, Kernig or clonus. There was no edema.

A provisional diagnosis of amebic dysentery, chronic hypertension with cardiac hypertrophy, slight arteriosclerosis, slight dilatation of the aorta, and ventricular extrasystole was made. The possibility of a senile diarrhea was considered.

Routine urinalysis was negative except for a trace of albumin and an occasional leucocyte. Blood examination showed hemoglobin 82 per cent, leucocytes 9.200 and differential of small lymphocytes 25 per cent, polymorphonuclears 69 per cent, myelocytes 2 per cent, large lymphocytes 3 per cent. Blood urea nitrogen was 46.70 mg. per 100 c.c. of blood. Blood Wassermann was negative. Stool examination showed no ova or parasites. It was yellow in color with an offensive odor. Red blood cells and leucocytes were abundant. Bacteriological report was negative. A blood culture was taken and dysentery bacilli of the Flexner type were found by Mr. Straus.* A second culture taken 5 days later was negative but the agglutination test was positive for dysentery bacilli of the Flexner type in a titer of 1/400, confirming the previous findings in the blood culture. Hence, a diagnosis of bacillary dysentery, Flexner type, was established. Blood cultures and stool examinations were made every five days thereafter with negative results except for a positive agglutination test for Flexner's Bacillus, which was present on each occasion.

*Read before the Staff Meeting of St. Elizabeth's Hospital, Richmond, Va., November 16, 1925.

*Confirmed by E. M. A. Enlows, U. S. Hygienic Laboratory.

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Her clinical course and treatment was as follows: Digitan, ampules 2, intramuscularly, was started for her heart condition. She was put on a light ulcer diet, chalk mixture, and paregoric for diarrhea. For two days her temperature would rise to 102 in the afternoon and fall to 99 in the morning. Respiration 30; pulse rate 120. There was no noticeable improvement. The head of the bed was then elevated. Hypodermoclysis of 5 per cent glucose in Ringer's solution was given, nothing by mouth but orange juice and lactose, with dilute hydrochloric acid, and opium and bismuth subcarbonate for diarrhea. For several days there seemed to be slight improvement. Patient seemed more rational, stools became less frequent, pulse 120, respiration 20, and temperature down to an afternoon rise of 100°. Blood urea nitrogen dropped to 25.5 mg. per 100 c.c. of blood.

August 10.—Acidophilus culture, one-half ounce three times a day between meals, was prescribed. Hot boric acid compresses were used over the abdomen for pain, but were soon discontinued. Alum and silver nitrate every third day were used in colonic irrigations. These were discontinued in seven days due to the discomfort w i t h o u t beneficial results. Opium and bismuth were started again. The patient remained at a stand-still, following the above treatment, for about one week. Temperature began fluctuating between a morning remission of 98 and an afternoon rise of 101-102. The number of stools increased from 18 to 30 in 24 hours. Respiration 20; pulse rate 120. The patient became restless, more irrational and emaciated, taking only broths, junkets, milk and jellies by forced feeding.

On August 25, the above treatment was discontinued and alkalinization of the gastro-intestinal tract attempted, using a prescription containing bismuth subcarbonate, calcium carbonate and sodium bicarbonate, 1½ drams three times a day. At the same time, mercurochrome tablets, 1½ grains, were given three times a day between meals. The mercurochrome caused nausea, vomiting and more severe abdominal pain, so it was discontinued the following day. Respiration was 40, pulse rate 136, and temperature still high and fluctuating. Digitan was started again. Saline solution was given by hypodermoclysis, and morphia for frequent stools and restlessness. Two hundred and twenty c.c. of anti-dysenteric serum (Flexner) were given in 50 c.c. doses twice a day intramuscularly. All of this resulted in no improvement. Pulse and respiration remained elevated and stools as frequent as ever, a b d o m i n a l pain becoming more marked. She gradually became weaker and passed into a semicomatose state. Nasal feedings were given twice a day. Respiration became faster and difficult. Signs of cardiac failure with congestion of lungs soon appeared. Caffeine, sodium benzoate, atropine, hypodermoclysis, etc., all failed to improve her condition and she died on September 11,—thirty-three days after admission to the hospital.

Her stools were very characteristic, fecal in character with a very offensive odor, loaded with mucus, polymorphonuclear and red blood cells. There were fifteen to thirty stools a day. The mucus soon disappeared.

As the disease progressed she developed a secondary anemia, hemoglobin dropping from 82 per cent to 55 per cent; red blood cells from 4,100,000 to 3,600,000. Differential count changed from small lymphocytes 25 per cent on admittance to 54 per cent; polymorphonuclears 69 per cent to 39 per cent; megaloblasts 2 per cent, normoblasts 1 per cent with oligochromia and anisocytosis, the latter being absent on admission and smear normal in appearance. The agglutination titer was checked at frequent intervals and dropped from 1/400 upon admission to 1/200 a few days before death.

There are two specific forms of dysentery, the amebic and the bacillary. The bacillary form is divided into two types, the Shiga-Kruse and the Flexner. According to Whitmore, the former usually causes a more severe dysentery and is responsible for about 75 per cent of all cases, with a mortality rate of 30 per cent. The latter runs a milder course as a rule, with a mortality rate of 5 per cent, however, in the young, the debilitated, and the aged, the mortality is much higher. Age, sex, race or climate play no part as predisposing causes. It occurs sporadically or in severe epidemics, the mode of transmission being by indirect contact with fecal material; hence, the importance of prophylaxis. It usually runs an acute course of two weeks' duration, or sometimes becomes chronic, lasting for months. Clinically, the disease is characterized by

toxemia, dehydration, anorexia with morning remissions, tenesmus, abdominal pain and frequent stools containing blood, mucus and leucocytes. Anatomically, it is characterized by diphtheritic and ulcerative lesions of the large intestine, caused by the liberation of an endotoxin from the bacilli located in the mucosa. In the severe acute cases, the patient usually dies on the third or fourth day from "toxemic shock." Long-standing chronic cases usually result from lack of efficient treatment during the acute attack or too early a return to a full diet, and the cause of death in such cases is usually due to exhaustion or some intercurrent disease.

It is important to differentiate bacillary dysentery from other conditions that may produce the same clinical syndrome. This is easy in epidemics, but more difficult in sporadic cases where such conditions as amebic dysentery, tuberculosis, syphilis, cancer, and the so-called senile diarrhea must be eliminated. Clinically, amebic dysentery runs a subacute course from the onset and there is no toxemia. Bacteriogically, the amebae are found in the stools. The stools of amebic and bacillary dysentery by careful macroscopic and microscopic examination can be differentiated. The continued appearance of mucus and blood in bacillary dysentery is the important point and not the mere presence as in the case of amebic dysentery. Polymorphonuclear leucocytes are abundant in bacillary dysentery and absent or few in amebic dysentery. In a large percentage of the cases of bacillary dysentery, the bacillus may be isolated in pure culture from the stools if done immediately. Only a few cases have been reported in which the Flexner organism was cultured from the blood stream. However, the agglutination test is positive in a large number of cases, usually after the tenth day, and is considered diagnostic in a dilution over 1:50. Microscopic examination of the blood usually shows a progressive secondary anemia, and a moderate leucocytosis.

In view of the above, more complete laboratory examinations, such as frequent stool examinations, blood cultures and serological examinations should be made as soon as possible in all cases of diarrhea in the aged, for no doubt many such cases are often diagnosed as "senile diarrhoea;" and failure to institute proper treatment immediately, a fact that cannot be over-emphasized, has caused a fatal termination.

The unusual features of the case reported may be summed up as follows:

1. Cultivation of the Flexner dysentery bacillus from the blood stream.
2. Inability to find the bacillus in the stools after repeated examinations.
3. The chronic severity and toxic course of the case compared with the mild course the Flexner type usually runs.
4. Failure to respond to any treatment instituted.

Laboratory Discussion*

From a laboratory standpoint this case is unusually interesting. It is the first time in an experience of fifteen years, with more than 2,600 blood cultures from various types of cases, that the dysentery bacillus has been recovered from the blood stream. Practically all textbooks state that the dysentery bacillus is never found in the blood stream. Investigation, however, reveals 25 cases in which it has been found, the Shiga bacillus 7 times and organisms of the Flexner group 18 times. Glynn and his collaborators[1] (1917) collected 14 cases, to which may be added 1 case reported by Kendall,[2] DeSautelle 1,[3] TenBroeck 1,[4] Thornly 3,[5] Maer 1,[6] Boyd 1,[7] Sellers 1,[8] Scaglione 1,[9] and Heim.[10]

In spite of this, however, these findings are comparatively rare. This may be because the dysentery bacillus only gets into the blood stream occasionally, or it may be that most cases of dysentery show such unmistakable symptoms that blood cultures are seldom made.

The failure here to find the organism in the blood culture after the first attempt is of interest. In this case, even had a blood culture been made at any subsequent date, the findings would have been negative.

It has been suggested that the dysentery bacillus only occurs in the blood stream after a breaking down of the intestinal wall and a general invasion of the body. This theory, however, is not borne out in this case, nor in most of the cases described in literature. The cases in which the dysentery bacillus has been found in the blood stream are by no means all fatal and, in many instances, the organism has been found only in the earlier stages of the

*From Laboratories of Richmond Health Bureau and Virginia State Board of Health.

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disease and not throughout its course. In this respect, finding the dysentery bacillus in the blood stream would seem to correspond rather to such occurrences in tyhoid and para-typhoid fever than in generalized septicemia.

The titer of the agglutination in this case is also interesting, the titer earlier in the disease being 1 to 400 and dropping later to 1 to 200. This is contrary to our usual experience where the titer rises, and it may be indicative of a lowered resistance. It is, likewise, a lower titer than is obtained in most cases of bacillary dysentery, as the titer usually runs from 400 to 800 and upon occasion may go as high as 1 to 25,000.

In this case, the organism was never found in the feces. This is also true in a number of the other cases described where the organism was obtained in a blood culture.

In summing up the bacteriological diagnosis of this case, it is well to call attention to the fact that had the blood culture not been obtained as promptly as it was,—that is, one day after the patient's admission to the hospital,—a diagnosis might never have been reached. The agglutination test, of course, would be conclusive, but unless one had reason to suspect bacillary dysentery the patient's serum might never have been tested against the dysentery bacillus. It would have been tried as a routine against the typhoid bacillus and perhaps against paratyphoid bacilli, but there are limits to the amount of work that one can do on a single specimen, and the agglutination test is not tried against all conceivable organisms, but only against certain of those most frequently found. In this way, many diagnoses are unquestionably missed.

We are convinced that bacillary dysentery is much more prevalent than is generally conceded. We are, furthermore, convinced that this disease does not always run true to form, or show typical symptoms. We believe that the dysentery bacillus is capable of producing symptoms quite different from those usually found, as this case demonstrates. This is, likewise, brought out forcibly by Glynn[1] in the report previously mentioned. Glynn quotes from several sources where the dysentery bacillus was found in the blood stream of patients who ran a course resembling typhoid.

Last summer, in Virginia, an epidemic of supposed typhoid fever was reported. It was found upon investigation that most of the cases were not typhoid fever but bacillary dysentery. The cases were discovered too late for the blood culture, or fecal examination, to be of value, but the agglutination test proved the infection to be Flexner dysentery. In this outbreak the orginial diagnosis had been made entirely from clinical symptoms, no specimens being submitted to the laboratory. With the facilities now available it seems unfortunate that physicians should not make every effort to obtain accurate diagnoses. An accurate diagnosis is undoubtedly the first step toward the proper treatment of a case.

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THE FREQUENCY AND SYMPTOMS OF PROLONGED RETAINED PLACENTA.

By M. PIERCE RUCKER, M. D., Richmond, Va.

In June of 1921, a general surgeon curetted a patient whom I had delivered the previous November, and made the diagnosis of retained placenta. The patient had had a normal third stage, and the after-birth was apparently intact. Her recovery was uneventful, and she had been in excellent health until just before she was operated upon, when she began to flow profusely. Unfortunately for the purposes of this paper, the tissue removed showed early decidua with uterine glands still present, and chorionic villi composed of embryonal connective tissue

with no blood vessels save a very occasional, centrally situated one. Covering the villi were two well-marked layers of cells, Langhans layer and syncytium. The pathologist's diagnosis was: "The picture is clearly that of early decidua and chorionic villi, complicated by infection, necrosis and acute inflammation."

In the discussion that this case occasioned, I was surprised to find how little there was in the literature upon the symptoms and frequency of prolonged retention of the placenta, either in whole or in part. Reed[1] divides the cases of retention into two classes—(1) where the placenta is partially detached, and (2) where the placenta is entirely adherent. In all cases of the first class there is hemorrhage more or less serious. In the second class the placenta may be retained for a period varying from a few hours to eight or nine months, when some pathological condition, amenorrhea, etc., leads to an investigation. According to Brown,[2] retention of the placenta is much more common after abortions than after full term labors (15 to 1). This seems equally true when you review the literature in reference to *prolonged* retention of the afterbirth. Ross[3] found a placenta in an excellent state of preservation after an amenorrhea of eleven months, following several miscarriages. Richmond[4] reports a *retained placenta* for four months after expulsion of a *two months'* fetus. For a month there was hemorrhage and then regular menstruation and the patient was apparently well. She passed the placenta spontaneously and brought it to the doctor, who hardened and sectioned it, but did not describe it in the report. Lamadrid[5] reports retention of placenta for twenty-two days after a miscarriage of four months. There was no bleeding and no infection. The placenta was intact and showed fatty degeneration. Barthelemy[6] reports a case that had frequent and repeated hemorrhages after an abortion until the placenta was expelled four months afterwards. Howard's[7] case retained the placenta a year after the expulsion of a four months' fetus. Houel[8] reports a case with a very sluggish uterus. On June 11, 1922, his patient expelled a fetus 15 c.m. long, but no afterbirth. On June 19, she expelled another fetus, but no afterbirth. The patient consulted Houel the following August on account of a hemorrhage, and on August 16, he dilated the cervix and removed two placentae with his finger. Gallant[9] reports a case that miscarried at the fifth or sixth month, a year previous to her consulting him. She flowed profusely for two months, then menstruation recurred and was of the twenty-eight day, three-day type. She missed her period two months before he saw her. and when she came to him, she had been flowing continuously for four or five weeks. She passed a fetus and sac complete and curettage showed a considerable mass of degenerated placental tissue. Godson[10] reports an afterbirth retained for eight months after a miscarriage of four or five months. There was profuse hemorrhage after a period of amenorrhoea of eight months. The afterbirth was complete but appeared markedly changed. Wallace's[11] case retained the placenta for two months after a premature delivery at eight months. Josephson[12] reports the case of retention of a full term placenta by a Pole of about thirty-five years, who gave a history of similar trouble on two previous occasions after abortions. Groat[13] reports a case that occurred in 1864. A well-developed seven months' fetus was passed before the doctor could arrive. The cervix was found tightly closed about the broken cord. Fifty-one days later the intact placenta was discharged without pain or bleeding. After a few days in bed the patient resumed her usual duties.

Newman's[14] case retained a placenta two years and discharged it along with a three months' fetus. Fruhinsholz and Mariot[15] have reported an apparently similar case. Their patient was an unmarried woman and no satisfactory history could be obtained. She expelled a living baby, a fresh placenta and a light colored placenta 12½x16½x2 c.m. It weighed 500 gms. and had no cord. Porcher[16] reports the following: Mrs. ———, about thirty-three years of age, gave the history of having had two abortions. She was delivered of a full size child by the breech. There was an hour-glass contraction that prevented the introduction of the finger into the cervix until considerable force was used. The placenta was found firmly adherent throughout its entire extent and resisted all efforts at separation both at the time and later when two consultants, Drs. Glover and Prioleau, saw the case. The cord came away in a putrid state on the third day. One month later the patient had

a severe pain and a sense of heaviness in the uterine region that kept up all night. Examination the next morning showed that the edge of the placenta had begun to separate, but the uterus contracted so firmly that all efforts to assist the separation were futile. The pain ceased entirely and the patient's strength improved daily. She was observed for a year but no part of the placenta passed. Palmer[17] cites the case of Dr. Thaush in which the placentae were permanently retained after two successive full term pregnancies. There were no untoward results in either case. Wenning[18] knew of a portion (1/5) of an ordinary sized placenta to be retained for a year.

Under the head of absorption of the placenta, Velpeau[19] cites the following cases: One case by Guillemeau in which the woman became pregnant in four months; one case by Planque; Naegele[20] and Solomon's[21] cases; one case by Gabillot; one case by McGlover and Porcher;[16]; one case by Morlanne; one case (Burger's) that Dubel extracted from the German journals; one case by Stoltz. He cites Ingleby as having seen small portions of the placenta be absorbed. Deubel quotes Beck as having seen the placenta absorbed after a four months' abortion. Velpeau[19] had seen four cases of absorption of the afterbirth after abortions. One of these came to autopsy some time after delivery and nothing was found in the uterus. Ramsbotham[22] reports a case where he was called in consultation to see a young woman six days after a primiparous labor, in consequence of the placenta being still retained in utero. He found the uterus painful and considerably larger than it should have been, had the cavity been empty. The os uteri was almost closed, and he could feel no part of the placenta. "She was suffering under a slight degree of fever; but there were no urgent symptoms of immediate danger." The patient was under observation for six weeks and in that time passed a portion of the placenta the size of a walnut. Ramsbotham states that Naegele[20] believed that such placentae were absorbed, and that Naegele had had four instances of the permanent retention of the whole placenta, and one instance of retention of a part of the placenta; and that Dr. Young,[21] of Edinburgh, and Prof. Solomon,[21] of Leyden, each have reported an instance in which no part of the placenta at full term ever passed away.

Dietrich[23] has reported a case of placenta accreta (or rather increta), with autopsy, that throws some light on the fate of portions of placentae that are retained for long periods of time. His patient was a 40-year-old V-para, who gave the history of having the placenta removed manually the last two times. The doctor who treated her in the last confinement, seven years previously, said that the removal of the placenta was very difficult and that a portion had to be left. Menstruation did not return. On account of her previous difficulties, the patient came into the clinic for delivery. She collapsed before the cervix was fully dilated and, after an anterior colpohysterotomy, was delivered by version and extraction. The patient died. When the uterus was removed at autopsy, there was found a perforation on the posterior wall of the fundus. The posterior wall of the uterus was almost entirely replaced by the fresh placenta and on the anterior wall there were the white indurated remains of the previous placenta which had become an integral part of the anterior uterine wall. From his study of this case and the nineteen cases of placenta accreta, he found in the German literature, he is convinced that the condition is a well defined clinical and anatomical entity.

Inquiry among physicians with whom I have come in contact convinces me that prolonged retention of a placenta, either in its entirety or of a macroscopical portion, after a full term pregnancy, is a very rare occurrence. Dr. Prentiss D. Johnston,[24] of Tazewell, Va., very kindly sent me his notes on such a case. His patient was an Hungarian woman of about thirty years, who had been delivered by a midwife. He was called thirty-six hours afterwards because the afterbirth would not come. Neither he nor a consultant were able to express it. Under anesthesia about one-third of a normal size placenta was removed manually. There were stony hard areas present which tore the end of the consultant's finger as he tried to peel off the remainder of the placenta. Failing to separate any more of the placenta, the consultant swabbed out the interior of the uterus with tincture of iodine. There was very little oozing. The lochia was less than usual. No more of the placenta passed. In less than

a year Dr. Johnston delivered the patient of a normal child without any complications.

With the idea of gaining further light upon the subject, I addressed the following questionnaire to the members of the American Gynecological Society and of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons:

"1. How many patients have you seen in whom a portion of a full term placenta has remained for a month or more?

2. What symptoms have these patient presented?

3. Do you know of a case where a portion of a full term placenta has remained within a uterus for six months or more without producing symptoms?"

One hundred and forty-three replies were received. Of these, one hundred and twelve were entirely negative. In this group were the replies of men of exceptionally wide experience such as Drs. Asa B. Davis, J. O Polak, E. P. Davis, J. Whitridge Williams and Joseph B. DeLee. Thirty-one answered question one in the affirmative, the number of cases ranging from one to many. The symptoms these patients presented varied greatly. In four instances there were no symptoms. The great majority, however, had bleeding in some form or other. The bleeding was described as continued spotting, frequent menstruation, profuse menstruation and sudden severe hemorrhages. The cases in which large portions, or the entire organ was retained, seemed to bleed less than those in which only a small portion of the placenta was retained. In the great majority of cases bleeding was the only symptom. Fever, or sepsis, was mentioned in seven answers and a vaginal discharge in six. In two instances the vaginal discharge was described as foul. Two reports mentioned subinvolution. One case had symptoms of toxemia. One complained of cramp-like pains. Four patients died, three of sepsis, and one of pulmonary embolism three weeks after a small portion of placenta was removed. One patient developed a septic endocarditis and arthritis and was in poor health at the time of the report. In a great many cases, especially where small portions of the organ were retained, fibrin formed about the placental tissue with the production of a polyp. Many of these were diagnosed submucous fibroids. When there is much foul discharge the condition may simulate malignant disease.

Three cases are mentioned as expelling the retained portion of placenta, one at seven weeks; two at ten weeks. One case in which the entire placenta was known to have been left in the uterus, apparently was absorbed. The uterus was found to be of normal size sometime afterwards, and the patient declared that she had not passed the placenta.

There was only one affirmative answer to question three, that of Dr. J. F. Percy.[25] His patient was a primipara, twenty-eight years of age. Her pregnancy was normal, as was also her delivery, except for the retention of at least one-third of the placenta. Attempts to deliver it with placental forceps and manually failed. The nurse was instructed to watch for its spontaneous delivery during the two weeks that she was on the case, but nothing was ever found. When the patient was dismissed she was told of the non-delivery of a portion of the placenta and advised that she report if anything unusual occurred, but nothing happened. She did not become pregnant the second time and passed through the menopause without incident. She was in excellent health at fifty-three years of age, when she was last heard from.

Comment

The question of prolonged retention of the placenta is of more than academic interest. Its possibilities from a medico-legal standpoint are considerable, as was shown in the celebrated case of Kitson vs. Playfair.[26] Dr. J. Clifton Edgar[27] wrote that he had testified in court in defense of a brother physician and the defense gained the point. His testimony was that such an occurrence could happen to any physician. From the standpoint of treatment one must distinguish between a placenta lying loose, but incarcerated within an irritable uterus, a placenta or portion thereof attached to the uterine wall, but having a definite line of cleavage and a placenta that is at least in part attached to the uterus with no line of cleavage (placenta accreta). An interesting case of the first class has recently been reported by Koch.[28] There is no room for any differences of opinion as to the proper treatment in such cases. The only question in the second class, when seen late is when the adherent placenta should be removed. The late Dr. Philander A. Harris[29] was emphatically against invading the uterine cavity

XUM

until the patient's pulse and respiration have been normal for several days. The only disasters he has seen follow prolonged retention of the placenta have been when this rule was not followed. In the cases of placenta accreta. Polak[30] recommends attempting the removal of the placenta only through an hysterotomy. If this be impossible the uterus should be removed. Vignes[31] did a vaginal hysterectomy in an infected case and the patient made a prompt recovery. Only in exceptional circumstances, as in Andrews'[32] case, can the placenta accreta be safely removed from below. To partially remove a placenta that has no line of cleavage favors both hemorrhage, sepsis and perforation.[33] Lehmann[34] believes that placent increta is the cause of diverticulum of the uterus. Such cases as the one he reports show the grave danger of attempting manual removal of the placenta or even a vigorous Crede maneuver. When circumstances and surroundings do not permit of following Dietrich's and Polak's suggestions of removing the placenta through an hysterotomy under the guidance of the eye, it would seem wiser not to attempt its removal at all.

Conclusion

From a search of the literature and from personal inquiry it would seem that the frequency of prolonged retention of the placenta varies in different places. In many large obstetrical clinics there have been no cases of retention of a portion of placenta for a month or more. On the other hand, some men have seen as many as fifteen or twenty cases. Curettage is very frequently an etiological factor.

Hemorrhage is the chief and often the only symptom. Some cases show evidences of infection. Occasionally there are symptoms of toxemia, and sometimes there are no symptoms whatever.

The outcome varies. There may be spontaneous expulsion, apparent absorption, the formation of polyps that may simulate submucous fibroids, or carcinoma of the body of the uterus, or death from sepsis.

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CLINICAL DIAGNOSIS OF DUODENO—PYLORIC ULCERS.*

By W. W. INSLEY, M. D., Christiansburg, Va.

The frequency of duodeno-pyloric ulcers, brought out in late years by Moynihan, Mayo and Codman as being as frequent as appendicitis and twice as frequent as ulcer in the body of the gastric mucosa (Codman), should direct the most careful attention of physicians to all cases of gastric disturbances.

According to Moynihan, 95 per cent of these ulcers are located fifteen millimeters from the pylorus, with the pyloric vein as a landmark. Mayo states that it is only within the neutralizing field of the duodenal bulb that an ulcer can occur. Sippy has stated that in the absence of cancer or ulcer and their complications, real distress or pain is seldom attributable to a disordered stomach. Leon Muenier also states that no true pain referable to the stomach exists unless there is a solution of continuity of the mucous membrane.

In the past and even at present busy practitioners have failed to diagnose many of these cases. In the light of present knowledge the majority of cases can be diagnosed by the general practitioner.

Essential to a diagnosis are careful history taking and analyses of symptoms. The history usually elicited is of a gastric disorder of more or less chronicity with intervals of apparent recovery, with pain or distress when the stomach is empty, pain being relieved by taking food. It has been stated that this evidence is sufficient to diagnose a duodeno-pyloric ulcer. Leon Muenier states that this late hunger pain may occur in ulcer of the stomach proper and also in patients with gastric hyperesthesia. He calls attention to another symptom present in those patients, by means of which the lesion is definitely located. The patient during an attack of late pain is given a large glass of milk. If on taking a few mouthfuls he begins to experience relief and the relief is gradual, the lesion is in the stomach proper. If this gradual relief does not occur, the patient drinks the entire glass of milk; if the pain still persists for ten to fifteen minutes and then there is a sudden gaseous eructation, to be followed a moment later by sudden relief of all pain, the lesion is in the duodenum. This symptom was observed in all duodeno-pyloric ulcers, confirmed by operation. Analysis of this symptom by screen and X-ray showed the pylorus in spasm and nothing passing into the duodenum, with the pain still persisting. Immediately after eructation and sudden relief of pain, examination showed the duodenal bulb filled. Muenier in his procedures offers another clinical sign. Given a patient with the subjective symptoms of ulcer and the stools showing blood, he practices lavage (on an empty stomach) with 200 c.c. of water containing 2 c.c. of glacial acetic acid. Under the action of the acid the pylorus contracts, closing the stomach from the duodenum, and preventing contact of the fluid with the duodenal side of the pylorus. The crystals of haemetin always present on a fresh wound will be dissolved and detected by chemical means in this wash water should there be an ulcer in the stomach proper. Should the test for haematin be negative, the ulcer is on the duodenal side. The test for haematin is carried out by placing several c.c. of the water in a test tube with an equal volume of H_2O_2 and a 1 per cent alcoholic solution of benzidin. In the presence of haematin the fluid gradually becomes green, fading to a blue green.

The presence of blood in the stools, so-called "tarry stools," is misleading, for this occurs only in copious hemorrhage, being seldom present in duodeno-pyloric ulcers as these lesions are small, and hemorrhage is scant and intermittent. For this reason failure to detect blood does not rule out a clinical diagnosis of duodeno-pyloric ulcer. Blood may occur as free macroscopic blood, water soluble haemoglobin, or haematin (digested haemoglobin), insoluble in water but soluble in ammoniacal solution.

The topographical differentiation as to the probable source of the blood—lower bowel, rectum, duodenum or stomach—requires laboratory equipment and time not usually at the disposal of the busy practitioner, and is not essential to a clinical diagnosis. Having elic-

*Read before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

XUM

ited the symptoms described, he can refer the patient to the roentgenologist for confirmation of the diagnosis.

SOME POINTS OF RELATIONSHIP BETWEEN THE ORTHODONTIST AND OTORHINOLOGIST.*

By W. BROADDUS MASSEY, D. D. S., Richmond, Va.

Mr. Chairman and Gentlemen: It is with a feeling of genuine pleasure that I make my maiden appearance before you—a body of nose and throat men. My subject, "Some Points of Relationship Between the Orthodontist and Otorhinologist," is one, I feel sure, that is of interest to all present, because it has to do with the problems that confront us in our daily work. The practice of orthodontia is particularly interesting and fascinating to me because it deals largely with children and is constructive and preventive.

All branches of medicine aim to prevent disease and to promote the health and happiness of the patient. Yours is the mother profession,—mine is a favored daughter and is fast growing to maturity. Since we are all working to accomplish the same end, namely, the prevention of disease and the promotion of the health and happiness of the patient, I believe we would all profit by closer co-operation and a more thorough and sympathetic understanding of each other's problems.

While I lay no claim to special skill above that of anyone else, nor am I a research man, I feel that my deep interest in this subject, to some extent, qualifies me to present this paper to you.

My paper will not present anything particularly new or original, but will try to place before you, in a definite way, some of the salient points of common interest to our respective lines of endeavor. If I can give you a somewhat general view of the subject of orthodontia and can show you what it aims to accomplish for the patient, how and when treatment should be instituted, and can arouse in you a greater interest in this important specialty, my paper will be well worth while.

Our patients, though they be well informed along other lines, know very little about the teeth and general health. When they are sick, have tooth-ache, sore throat, or crossed eyes, or see that their child's teeth are crooked and the mouth is malformed, they consult us in our respective fields. But how to prevent these ills they know very little. So this makes our responsibility all the greater. It is up to us to educate them along these lines. They usually are very credulous, so it behooves us to inform ourselves in order that we may be able to discharge this duty. I believe that in order for me to be in a position to do my patients most good, I should be able to know when they need to consult the rhinologist and physician. You, by the same token, should know when your patient needs to consult the dentist and orthodontist.

All branches of medicine and surgery are so intimately related that it is very difficult to emphasize the relationship between any two special branches. Especially is this true in the case of orthodontia and rhinology, where the relationship is so intimate and obvious that one specialty is almost essential to the other.

Nasal breathing is so important from the standpoint of general health and from the standpoint of appearance and the proper development of the dental arches that no pains should be spared in the effort to establish it. In adenoid cases, where mouth breathing has been indulged in for a long period, the arches do not develop laterally. They become narrow, the upper anterior teeth protrude, the lower jaw recedes, thus materially hampering the proper functioning of the teeth and jaws, and gives the patient a very simple and sometimes an idiotic expression. The removal of adenoids and tonsils, alone, in a great many of these cases will not suffice. The dental arches should be developed laterally, the upper teeth retracted and the lower jaw brought forward. If this is not done, the patient cannot reap the full benefit of your operation. The nasal passages have become so constricted that the establishment of nasal breathing is very difficult. And, on the other hand, the orthodontist, in his enthusiasm to widen these narrow arches, must not forget that there is a cause for the existing deformity. And it usually can be found in the form of adenoids and diseased tonsils. If these are not removed, his work cannot be successful. I fear that none of us are sufficiently careful in this matter. We are prone to see only our own field, and the patient suffers accordingly.

The otologist is sometimes consulted by patients suffering from pains in the ear. After

*Read before the Richmond Eye, Ear, Nose and Throat Society, May 18, 1926.

thorough examination of the ear and its appendages, no cause is found. Upon further examination, it may be found that impacted or partially erupted teeth are the offending members, because they do not have sufficient space to erupt in their proper places. These teeth must be sacrificed. Taken in time, sufficient space could have been provided by orthodontic measures for these teeth, thus preventing the ear pain and, incidentally, saving good teeth. Certainly such cases are not infrequent, and only by co-operation can we obtain results which will do us credit and secure relief for the patient.

At this point, for the sake of clarity, I think that it would be well for me to define some of the terms I shall use.

Orthodontia comes from two Greek words, ortho, meaning straight, and odons, meaning tooth,—hence, straight tooth. Back in the early days of this specialty, orthodontia did not mean much more than that. But today it has a broader meaning. Quoting Dr. Case: "Orthodontia is that branch of science that has for its object the correction of all dental and dento-facial malocclusions."

Malocclusion is a term that "refers not only to irregularities of the individual teeth, but also to all imperfections in facial outlines that are caused by malposition of the teeth and jaws, or that may be corrected through the medium of mechanically constructed appliances attached to the teeth."

I will not bore you with details along this line, but suffice it to say that for the purposes of teaching and discussion, malocclusions are classified according to their several types.

Sir William Osler once said: "In the whole realm of hygiene there is no one thing so important as the hygiene of the mouth." I believe that the medical world has had abundant proof of that statement. All too frequently the mother brings her child to have its teeth "straightened" for esthetic reasons only, (and I fear that the general practitioner of dentistry and medicine sometimes refers the patient to the orthodontist for the same reason). It must be borne in mind that normally developed and efficiently functioning teeth and jaws and their associated parts are great factors in mouth hygiene and, hence, general health.

I feel that it is superfluous and simply marking time for me to tell this body of men that mouth conditions have a very marked influence on the general health. You know that. However, there is one particular mouth or gum disease, pyorrhea, that is blamed for many ills far removed from the oral cavity. Now, one of the recognized causes of pyorrhea is known to be traumatic occlusion. When teeth are irregular and malposed, the normal force of the teeth one upon the other is destroyed. Some teeth receive too much force, causing trauma, thus predisposing the mouth to pyorrhea, and the individual so affected to all of the ills that follow in its train. Orthodontic measures instituted at the right time could prevent this traumatic occlusion, and thus save the patient much suffering and many teeth, in addition to giving him the satisfaction and comfort of possessing a good set of teeth and jaws. Teeth that are crowded and irregular in alignment are difficult to clean, and are thus more susceptible to decay. Then some teeth cannot function normally and sometimes not at all, thus laying them liable to the penalty that Nature inflicts on all organs and parts of the body that are not used.

I have touched on mouth breathing briefly, but as this is a matter of great concern both to the rhinologist and the orthodontist, the field in which we are both vitally interested, it might be well for me to have something to say about the causes and effects.

Causes.—It is common knowledge that nasal and pharyngeal infections and sometimes deflected septa so obstruct the nasal passages that it is often difficult and frequently impossible for the one so affected to breathe through the nose. Nasal obstruction is not often complete in the young subject during the day when in the erect posture, but is more often intermittent and partial. It is at night, when the child is asleep, that obstruction occurs, thus causing mouth breathing during the night only. This accounts for the fact that many mothers will declare to you that her child is not a mouth breather, when you know beyond doubt that she is mistaken. The evidence is written all over the child's face. This also accounts for the fact that the rhinologist and orthodontist do not see many of these children before nose and throat conditions are alarming and the jaws badly deformed.

Effects.—Sometimes the effects of mouth breathing develop so slowly and insidiously that this cause of poor physique does not re-

XUM

ceive the attention it deserves, in spite of its frequent occurrence.

The mouth breather of long duration has a thin, narrow, and poorly developed nose, is susceptible to headache, catarrhal conditions, deafness, sore throat, laryngitis, and the obvious detrimental effects on the chest. This flattening of the chest with its shallow breathing and want of expansion of the lungs, with frequent and prolonged colds, is undoubtedly a predisposing cause of bronchitis and pulmonary tuberculosis.

It is difficult to say just how much this condition affects the mental development, but the open mouth, sunken chest and occasional hardness of hearing and blankness of expression, does give the impression of a lack of intelligence and alertness.

It is in this field particularly that the rhinologist and orthodontist can combine forces and work together for the health and happiness of the patient. The type of deformity associated with mouth breathing becomes definite between the ages of five and six. Even earlier than this it is possible to determine whether or not the jaws are expanding, by the spaces between the temporary teeth. I will show models illustrating this point.

Too frequently the parents are advised by the dentist and physician to wait until the permanent teeth erupt b e f o r e trying to "straighten" them. They say, "maybe they will come in straight." If the jaws are not sufficiently developed to accommodate the permanent teeth, which are larger than the temporary ones, this is impossible. You might as well say, wait until the patient is about to die—then call the doctor, or wait until the child is horribly deformed, then treat. By the time a child is five years old there should be large spaces between all the six anterior teeth. If these spaces are not present by that time, they never will be unless the jaws are expanded by orthodontic measures. Therefore, the teeth are obliged to erupt out of line. It is because of the failure of those responsible for early diagnoses in these cases that we see so many squirrel faced people and so many chinless monstrosities walking the streets every day. You start a child's moral and mental training when he is young, when his mind is plastic, when he is growing. The time to treat any deformity is when the patient is young and the bones are plastic and growing. As you know, the maxillary bones and mandible form the frame work for most of the face. Teeth can be straightened successfully in the adult mouth, but when the malocclusion is so extensive as to cause a great deformity in the facial outline, the latter cannot be overcome altogether, because the face is fully developed. But by recognizing these cases early and removing nasal and pharyngeal obstructions, and, when jaws are narrow and otherwise malformed, by instituting early orthodontic treatment, we can be a credit to our profession by preventing disease and contributing to the health and happiness of God's little ones.

Medical Arts Building.

DYSTROPHY OF THE ENDOCRINE GLANDS IN RELATION TO THE EYES.*

By ROBERT SCOTT LAMB, M. D., Washington, D. C.

This subject is replete with facts obtained from results of the administration of endocrine substances, of such startling nature as to cause unbelief in the minds of those treating their cases in routine manner by other methods. And it is only by careful comparative observations of results obtained by different methods used in the treatment of ocular conditions, with which you are all familiar, that I have been able to decide the advantage of the additional use of endocrine substances in their treatment.

Did time permit, I should be glad to go back thirty years, to the methods I then saw used by one, now dead, of the better known oculists of this country, for it would by contrast show how markedly knowledge of the causation of ocular diseases and changes in treatment proportionate have increased and improved, to the end that many affections then considered hopelessly incurable are now quite cured by present-day drugs and methods of treatment.

What are the endocrine substances most potent in the treatment of ocular diseases? Thyroid, the true hormone and posterior pituitary. Why? Because they control in large measure the metabolism of the body. All the other endocrine substances can be used in conjunction, as indicated, but these two are sheet anchors. Undoubtedly, more is known about the thyroid than any other of the endocrine organs, but of late much has been done biologically and physiologically in the study of all the

*Read before the Medical Society of the District of Columbia, at Washington, April 28, 1926.

endocrine glands, and, also, much has been published regarding them. However, there is much more to be done to positively establish some of the facts presented and believed to be true. To date, we know, without peradventure, that thyroid glands secrete and send through the system a true hormone; the gonads also are believed to do so, but other glands secrete chemical substances which do not entirely comply with the requirements or specifications for nominating them hormones. Such substances are pituitrin and adrenin. Therefore, postulations in advertisements of certain manufacturers of compounds of endocrine substances are impossible of proof at present, and such substances should not be used.

You all know that the immediate activation of the secreting structures of the endocrine glands is *via* the autonomic nervous system, and must always be considered when prescribing such gland substances.

What you are most interested in is the practical usefulness of endocrine substances in the treatment and cure of ocular diseases. But, before telling of that, I must ask you to consider with me, to some extent at least, the causes underlying the diseases and the *modus operandi* of their occurrence. Our first consideration is resistance, either local or individual, for most persons are somewhat imbalanced as to their endocrine organs, which imbalance varies also at different periods during the life of each individual. Through circulatory anomalies or injuries, local areas may be more vulnerable and so predispose the individual to attack by mechanical, chemical, or bacteriological substances. Whether or not, in our present problems, eye-strains incident to improper lighting conditions or improper corrections for errors of the symmetry in the eyeballs may be properly considered an injury, I submit to your individual minds. If the resistance were at all times good, there would be, as you all know, little need for our services.

How important it is, then, that, in our attempt to cure ocular diseases, we should get all the help we can by using means to increase the resistance of the individual and the local area, while giving and using local drugs and measures to combat the particular affection present. This brings the crux, for herein lies what I believe to be the only difference in my own method of attacking the problem of the treatment of ocular diseases, pursued for fifteen years, and methods used by my colleagues, viz., that I have endeavored to ascertain what were the endocrine deficiencies in any individual case, and to supply by mouth the substance from similar substances from the lower animals. The first thing to be established was, what ocular symptoms or conditions followed the known disorder or deficiency in some known gland. As there was no data to turn to for guidance, all observations had to be original. Although I have elsewhere published some findings in regard to the endocrine disorders and their effects on the eyes, it has been impossible to gather together and publish the facts observed in connection with this work, and I can, therefore, only ask your kindly consideration of what I have to tell you. These results are the epitomized conclusions after years of study and contemplation regarding thousands of careful observations.

Have you noticed in myxedematous cases that the lids were thickened, the eyebrows and lashes few, that there is a marked intumescence of the conjunctiva, with somewhat the look to the cornea of a fish out of water? If you have, you will probably recall many other cases where these conditions were less marked. If you have not done so, you will doubtless begin, for these are cases needing thyroid. Have you noticed pale, light-haired, nystagmic children with marked disturbance in the pigment distribution of the fundi? They need posterior pituitary; so, also, do other persons with disturbances of pigment of lesser degree, whether of anatomic or pathologic origin.

You ask, in what kind of cases should thyroid be used? And I give you a long series, having a good reason, or several good reasons, in each instance for its use, viz., glaucoma, corneal ulceration, interstitial or parenchymatous keratitis in pannus, vascularization of the cornea, in lens opacities and incipient cataract, in keratoconus, nodular keratitis or in keratomalacia, in vitreous haze and opacities, in angiosclerosis of the retina and choroid, in hemorrhagic retinitis or chorioretinitis, and in edema of the nerve and retina. Why? Because thyroid increases the metabolic rate and improves nutrition. I could give you case report on case report to substantiate the foregoing statement —cases of a character similar to many handled by other and previous methods,—and I can

XUM

positively assert that by none have I had such rapid progress as has been obtained by the method I am suggesting for your use.

Let me pause for a moment to cite a few cases. On returning from a meeting of the American Academy in September of last year, I found a case of extensive onyx or abscess of the left cornea, with a left-sided trifacial paralysis, who had seen several oculists, with a prognosis for the removal of the eye. After desiccating the corneal anterior layers including the abscess, the patient was given thyroid, five grains, and lactate of calcium, five grains, three times daily; while locally, atropin, one per cent, and dionin, five per cent were used three times daily. She has now entirely recovered from her paralysis and her vision is restored to normal. Another case of abscess of the right cornea has had similar treatment with like result. A case of gonorrheal ophthalmia, with perforating ulcer of the right cornea was similarly treated, after controlling the infection, with a continuing absorption of the scar; although as yet there is still a central leukoma with anterior synechia, there is vision and a gradual improvement in it. Two children of different families, with recurrent phlyctenular keratitis, each of whom had been treated over a period of two years by several oculists when seen, were on a regulated diet and had been confined to dark rooms; they could not see to play outdoors. With atropin and dionin locally, and one-tenth grain thyroid and two grains of lactate of calcium internally three times daily, having also unlimited diet, they were within two weeks with dark glasses playing outdoors with children of the neighborhood. So, also, with numerous similar cases of less severe type. Time does not permit me to cite cases of each of the diseases mentioned above, although endocrine substances, including suprarenalin and gonadal substances, were used in all with excellent results. And, whereas I cannot here go into a discussion of the causative factors of glaucoma, I can assure you that with a half grain thyroid and five grains of lactate of calcium, together with local drops of pilocarpin and dionin, as indicated by me in 1913, I have found no need to operate on any of the cases in all these years. I have, however, thought best in consultation, because of the ocular state present, to advise operation, knowing, as I did, I could not control the case myself.

Axiomatically, all symptoms of dystrophy are not present in any given case, and only a careful and exhaustive history taking will elicit symptoms which help in making a diagnosis, thereby leading to the idenity of the culprit gland or glands and the administration of substitute therapy.

I would not have any one blindly follow my prescriptions in this work, but would rather that each one study the subject and, with the knowledge he acquires thereby, undertake to control his cases with the additional means at his disposal. He will thus find his results better and much easier to obtain than by any method formerly known to him. It is always pleasurable to be able to expound the subject near to one's heart to a group of persons interested. I thank you all for such an opportunity as I have just had. I hope the discussion will bring forth other information that, for lack of time, I have been unable to present to you.

204 *Stoneleigh Court.*

FEEDING THE NORMAL INFANT THE FIRST YEAR.*

By THOMAS D. JONES, M. D., Richmond, Va.

Preventive medicine is occupying a constantly widening field in general medical practice, as well as in the various specialties, and there is probably no period of life in which the application of such principles will yield richer rewards than the first year of the infant's life. Through studies of the physiology and chemistry of the infant's digestion a better understanding of the subject of infant feeding has been reached and the problem has been greatly improved. If we keep in mind the requirements of the normal infant during this period, with a clear conception of normal growth and development, a great deal can be done toward reducing the morbidity and mortality in later infancy and early childhood. However, we have to admit that in spite of the work that has been done in simplifying infant feeding in the past few years, the fact still remains that there is no *perfect* infant food. We are all familiar with the fact that breast milk more nearly approaches perfection than any other infant food of which we have knowledge. Such a condition as an idiosyncrasy for breast milk is denied by some good authorities. Yet we cannot get away

*Read before the Manchester Medical Society, April 6, 1926.

from the fact that we do occasionally see infants failing to thrive on an adequate supply of breast milk which, so far as can be determined, is normal in composition, that will do perfectly well on some artificial food. Such cases, however, are rare, and the importance of breast feeding in early infancy cannot be over stressed. In a summary of a review of the literature on infant feeding in 1924, Dr. Rudolph Moffitt states that "Richardson has been able to prove by statistics that the breast fed baby has five times the best chance for life and health as the artificially fed baby." It is, therefore, incumbent upon both the pediatrician and the obstetrician to utilize all of their resources in establishing and maintaining breast feeding whenever it is possible.

Aside from the rare idiosyncrasy that the infant may manifest for breast milk, there is probably only one positive contraindication to breast feeding, namely, active tuberculosis. Sedwick and Wyman state that where the lesions are healed, there is, from the infant's standpoint, no objection to nursing, the manner in which the mother's strength holds up being the only consideration when nursing is permitted. Pregnancy has been considered by a great many authorities as a contra-indication for breast feeding, but it has been shown by Schloss that the supply and composition of the milk of cattle is not influenced by pregnancy during the first half of the lactating period, but that after that period there may be a reduction in quantity, but the quality is unchanged. Lactation has been observed as an almost continuous state in some mothers who give birth to babies with great frequency, and no ill effects have been recorded on the infants nursing these mothers. No other accurate observations have been recorded in pregnant nursing women. Sedwick and Wyman further state that in epilepsy and insanity the only determining factor is the possibility of the mother injuring the infant during an irresponsible period. The composition of the milk in these conditions remains normal. Nephritis and puerperal convulsions are indications for temporarily discontinuing breast feeding, but, so far as the infant is concerned, do not justify a permanent discontinuance. Malignancy apparently does not influence the quality of the milk, and is no contraindication so far as the infant is concerned. Syphilis in the child or mother is no contra-indication unless it has been acquired since birth, but to the contrary should be kept up if possible, as the syphilitic baby tolerates artificial foods poorly. In such severe acute infections as pneumonia and typhoid fever, it may be necessary to discontinue nursing temporarily, in order to conserve the mother's strength, but no harmful results ensue so far as the infant is concerned, except from the lessened supply, the fact being well established that no toxins are transmitted through the milk under such conditions.

How are we to determine whether the infant is getting an adequate supply of breast milk which is normal in composition? This question is sometimes hard to answer. The matter of quality, however, is seldom a cause; furthermore, qualitative examinations of breast milk give little dependable information. If it were possible to completely empty the breast at regular intervals for a twenty-four hour period, and get an analysis of a portion of the total twenty-four hour output, we might obtain information of some value, but even then there is room for error, as there is no known method of emptying the breast as satisfactorily by artificial means as the nursing infant. An analysis of a single expression of breast milk is wholly undependable, as the output may vary at different periods of the day, and various portions of a single output will vary. The first stripping is high in sugar and low in fat, the last stripping being just the opposite. Quantitative tests are dependable when the infant is weighed before and after each nursing for a twenty-four hour period, but obviously not for a single nursing, as the quantity may show marked variation at different periods of the day. It follows, therefore, that the most reliable practical guide is the condition of the infant. Is the weight satisfactory? Is there vomiting? Does the infant cry a great deal? Is sleep satisfactory? Is there constipation or diarrhoea? The next question to answer is, is the disturbance a fault of the infant or is it the food? It requires a careful study and thorough physical examination of the infant to be able to decide this point. Failure to gain weight and constipation usually mean an inadequate quantity, if there is no vomiting. Loose, green, watery, acid stools with excoriation of the buttock, usually means a sugar disturbance and can frequently be corrected in the breast fed baby by

XUM

discarding about an ounce of the first portion of the breast milk, and substituting a like amont of protein milk solution sweetened with saccharin. Soapy, rancid smelling, acid stools, producing either constipation or diarrhoea, usually means too much fat or an intolerance for fat on the part of the infant, and may frequently be corrected by limiting the duration of breast nursing, and giving a complemental feeding of a protein and carbohydrate mixture, care being taken to completely empty the breast by manual means if necessary after each nursing.

The next question is, where there are evidences of an inadequate supply, what can be done to increase it? After a thorough review of the literature, and a close study of his own cases, Donelly reached the conclusion that there are only three measures on the part of the mother to be considered which favorably affect the supply: 1st,—plenty of rest; 2nd,—moderate amount of exercise, never to the point of fatigue, with plenty of fresh air; 3rd,—a generous diet consisting of a general variety of food but no one particular food. All authorities are apparently in agreement on the favorable effect upon lactation of regular nursing, so that when the supply is inadequate it is better to allow the infant to nurse each breast for ten or twelve minutes, and then give a complemental feeding rather than to give a supplemental feeding. Such measures will frequently establish an adequate supply of breast milk and the complemental feeding may be left off entirely later on.

Many medicinal agents have been heralded from time to time as having specific galactagogue properties, but there seems to be no definite proof of any drug having any effect upon the mammary secretion. McKenzie, Hammond, Ott and others have thoroughly investigated the influence of pituitary extract and corpus luteum, and they all agree that there is a temporary increase in milk following their administration, but that the effects never last more than twenty-four hours, often not more than ten minutes, and that a diminution usually follows, so that the average is not increased. Such tissue extracts as placenta, fetus, adrenals, thyroids, ovaries, etc., have been employed with widely varying results, but most workers are agreed that there is as yet no definite proof of any effect upon the mammary secretions from the adminstration of any of these substances. It is also important to note that there seems to be no evidence to show that the intake of large quantities of fluid has anything to do with increasing the milk supply, although the method is still extensively used.

When should the infant first be put to the breast? There seem to be some widely varying opinions from many good authorities concerning this point; for instance, Talbott and Morse recommend from six to twelve hours after birth, and every six hours the next day and every four hours the third day, and shorter intervals thereafter. Czerny advises not at all on the first day, once on the second day, twice on the third day, then increasing one feeding each day, until the infant receives five feedings during the twenty-four hour period. Feer recommends leaving off until the child evidences hunger, and states that this is seldom manifested under twenty-four or forty-eight hours.

Should water be given the first few days? This practice seems generally recommended. Sedwick and Wyman studied a group of seven hundred infants with reference to this point, one-half of whom were given water *ad libitum* after nursing starting sixteen hours after birth, the other half receiving nothing except what was obtained from the breast. The average initial weight loss was the same in both groups, no difference in temperature was noticed, and inanition or dehydration fever occurred with just as much frequency and severity in one group as the other; however, no detrimental effects have been reported by any observers from giving water in the first few days. Bachman, of Chicago, tried out the effect of giving complemental feedings to the newly born as a means of preventing the initial weight loss for the first three or four days. They were all offered 60 c.c. of various formulae after each nursing, some receiving Ringer's solution with 5 per cent glucose added, some Ringer's solution with 10 per cent glucose added, some albumen milk with dextri-maltose added, some receiving whole milk dilutions with dextri-maltose added, and others receiving condensed milk solutions. He found the average weight loss in those receiving complemental feedings was 5 per cent of body weight against the generally accepted 9 per cent loss in the control group. No definite conclusions were reached as to the best type of food to use as a complemental feeding.

Though the best results seemed to be obtained in those receiving formulae with relatively high sugar content, he believes that complemental feedings for the first few days are a perfectly legitimate practice. It would seem that the practice of giving the breast twelve hours after birth, if the mother's condition is good, and then every six hours for forty-eight hours, and shorter intervals thereafter, with water *ad libitum* between feedings but not too close to nursing time, would apparently about strike a middle ground and would be a safe practice to follow in the majority of cases.

Artificial Feeding

When for any reason we absolutely have to decide in favor of artificial feeding, at least five general principles have to be borne in mind in order to prescribe a formula intelligently: 1st, Caloric requirements; 2nd, Intervals between feedings; 3rd, Fluid requirements; 4th, Proper food elements; and, 5th, Digestibility of food.

Caloric Requirements.—A normal baby under six months of age will require from forty to fifty-five calories per pound, per body weight, each day. An infant will rarely gain on less than forty calories per pound, and it is not good practice to exceed fifty-five, although many babies may, for a while, take more without any apparent untoward effect. but continued over-feeding almost invariably leads to trouble. Premature or athreptic babies, of course, require higher caloric intakes, but this paper only deals with feeding normal infants.

Intervals Between Feedings.—There seems to be a great diversity of opinion as to the intervals between feedings among equally good authorities. We find some good authorities still recommending the two hour interval, and others three and four hour intervals. Brennaman states, in a recent article, that the fact that such differences of opinion can exist among equally experienced and equally succesful clinicians, can admit of only one explanation,—"that the baby can be fed every two hours, every three hours, or every four hours, with nearly equal success," and that "most of us follow the old path from habit rather than try a new one." The practice of following the three hour schedule with seven feedings during the twenty-four hour period,—that is, at six, nine, twelve, three, six, nine and two A. M.,—and leaving off the two A. M. feeding at the end of the third, or fourth month, and adopting the four hour schedule by the end of the fourth or fifth month, with five feedings daily thereafter, proves satisfactory in the great majority of cases.

Fluid Requirements.—The average bottle baby receiving cow's milk dilutions rarely actually needs additional water, although the practice of giving water between feedings is not harmful unless it is given too close to feeding time. Many breast fed babies, however, actually *need* water between feedings, as the amount of fluid obtained from the breast is usually smaller than the artificially fed baby receives with the average milk dilution. The fluid requirement is greater in hot weather than in cold weather, for obvious reasons. If in making up a formula we wish to provide adequately for the fluid requirements, which is the usual practice, we usually provide from two and one-half to three ounces per pound per body weight each day. The rule that is often followed of giving one or two ounces more than the age in months at each feeding with a minimum of three ounces, and a maximum of eight ounces, is a fairly safe rule to follow in the majority of cases.

Proper Food Element.—Under this head we have to consider fats, carbohydrates, protein, mineral salts and vitamines.

Fats.—The exact role of fat is not absolutely established. It is known to have a definite influence on mineral metabolism, especially calcium, is of value in saving protein waste, and also contains fat soluble A vitamine, and promotes growth. It may, however, be left out of the infant's diet for a longer period than either proteins or carbohydrates. The reason for the difference in the digestibility of the fat of cow's milk and mother's milk is not clearly understood. Cow's milk is known to contain a much greater proportion of volatile fatty acids than the fat of breast milk. The oleic acid content is much higher in breast milk. There is also a difference in the size of the fat globlule. Brennaman does not believe that the great difference in the infant's ability to digest the fats is due entirely to these differences, but believes that the medium in which they are held is the determining factor. It is known too that a larger amount of fat may be given in boiled milk than in raw milk. The percentage of fat that can usually be given the normal infant in a formula will vary from

XUM

1 to 4 per cent, although the latter percentage can rarely be reached before the end of the first year. When fat intolerance is once established in the infant, it is very hard to overcome, so that the danger of giving too high percentage of fat in the formula should be constantly borne in mind, and it is always wise to test the infant's tolerance for fats with low percentages at first, and very gradually work up.

Carbohydrates.—Carbohydrates, like fat, supply energy, increase weight, spare protein, and may entirely replace fats for a short time. They are also important in the oxidation of fats and promote water retention. They can, therefore, furnish the needed calories when the fat and protein intake are inadequate. The importance of this element in the infant's diet is indicated by the large proportion of sugar which the mother's milk contains. The half and half mixtures of milk dilutions reduce the sugar content to 2 per cent so that it is necessary to make up at least a part of this deficiency by adding some form of sugar to the formula. For this purpose dextri-maltose and corn syrup are perhaps the most extensively used at this time. Cane sugar, milk sugar, or Mellin's food may also be used with equally as good results in most cases. It is best to begin with a small amount at first—about one-half ounce to the day's formula—and gradually work up to the required amount, although sugar intolerance can be more quickly corrected than is the case with fats. DeSanctis recommends the addition of one ounce of sugar to the formula of an infant weighing under ten pounds and one and one-half ounces for those weighing over ten pounds. The rule followed in some of the European clinics is to give one one-hundredth of the infant's weight in sugar for a twenty-four hour period; either rule, however, seems fairly safe to follow in feeding the average normal infant.

Protein.—Protein serves the purpose of repairing the wear and tear, and promoting cell growth, and may also be a source of energy. A larger percentage is required in modified cow's milk than occurs in breast milk, about one and five-tenths gms. per kilo of body weight being apparently all that is required in breast fed babies. But in artificially fed babies this amount has to be greatly increased. Griffith states that 7 per cent of the caloric intake should be given in the form of protein. The probable reason for the necessary increase of protein in cow's milk dilutions is the relatively low lactalbumen content of cow's milk which is only about one-fifth of the protein content, whereas in breast milk it comprises about two-thirds of the protein content.

Mineral Salts.—All of the mineral salts are present in sufficient quantities, even in cow's milk dilutions, except iron, and there is usually enough surplus iron stored up in the liver of a full term baby to meet the demands for the first six months of life, so that the addition of these elements to the formula rarely has to be considered in the first six months of life.

Vitamines.—A recognition of the existence of the food accessories, known as vitamines, in the past few years, has resulted in the selection of foods from a new angle, and, because of the limited variety of foods which the infant receives, is a much more important factor in the consideration of the infant's diet than is the case with the adult. Funk first coined the name for the substance which he believed curative for beriberi in 1911. Hopkins and others had reached the conclusion much earlier that the growth of laboratory animals was dependent upon something in the food that could not be accounted for in the ordinary nutrients, and called these hypothetical substances "accessory food factors." Funk's work showed that the curative substance of beriberi was abundantly found in Brewer's yeast. He was able to obtain from yeast a crystalline substance, which contained nitrogen, and believed that this substance belonged to the class of chemical substances called amines, and that its absence meant death, and its presence life. This belief was responsible for the present nomenclature. These substances, however, were later shown to be complexes of the curative substance, combined with adulterants. It is, therefore, not definitely known at this time whether or not they are amines at all. McCullom holds that they should be called "unidentified dietary factors.'

This problem had already engaged the attention of other investigators, notably Eijman, Stepp, Suzuki and his co-workers, resulting in the expression of a great variety of views and a great deal of controversy, which finally resulted in bringing to light some hitherto unknown facts, which have proved a brilliant contribution to the study of nutritional diseases.

XUM

The existence of three vitamines or food accessories—A, B, C,—have seemed definitely established for several years; more recently D and E have been adopted by many of the workers in this field.

Fat soluble A, which is abundantly found in cod-liver oil, butter, cabbage, carrots, sweet potatoes, spinach, egg yolk, and to a lesser degree in many other foodstuffs, seems to be an important factor in the promotion of growth. Its deficiency is known to produce two affections of the eye, known as xerophthalmia, and keratomalacia. Attempts have been made to associate this substance with rickets, but definite conclusions on this point have not been reached.

Water soluble B, which is abundantly found in milk, yeast, vegetables, orange juice, the husks of grain, and is present to some extent in most foods, because of the wide range of its source, is seldom if ever a problem in infant feeding. Its absence, however, is known to cause beriberi; and the polyneuritis of birds and animals is due to a deficiency of this substance.

Water soluble C is present in all citrus fruits, being most abundantly found in oranges, lemons, raw cabbage, lettuce, peas and spinach. Milk contains only a small quantity, the quantity being dependent to some extent upon the food of the mother or cow. It is rapidly absorbed by slow heat and to a lesser extent by rapid heat. Its deficiency will cause scurvy, which is one of the most frequent conditions seen in infants to result from a vitamine deficiency. It follows, therefore, that an additional supply of this antiscorbutic substance has to be furnished in feeding the infant, because of the effect of pasteurization and boiling of milk on this vitamine, and it deserves more attention in the artificially fed infant than is the case with the breast fed baby. Its administration is generally recommended by the end of the second month, usually in the form of orange juice, beginning with one teaspoonful and gradually increasing to as much as two or three ounces by the end of the fourth month. It is probably best given between feedings, preferably about one hour before the second bottle, and it may be sweetened diluted with water, or given straight. Tomato juice apparently answers the same purpose, and may be given in the same manner. Some of the European clinics report equally as good results from the administration of yellow turnip juice.

Vitamine D.—The anti-rachitic property of cod-liver oil is generally believed to be due to its vitamine D content, and should probably be considered as a necessary element of the infant's diet, although the results of a very careful study of the effects of the administration of cod-liver oil on the control and prevention of rickets in 210 cases of infants, recently carried out by Dr. May G. Wilson at the New York Nursery and Child's Hospital, would indicate that this agent is not as potent as an anti-rachitic factor as has been generally believed. The results were briefly as follows: Of the 210 cases studied, 132 received cod-liver oil; 52 per cent showed clinical evidences of rickets at three months, and 66 per cent at four months. X-ray studies revealed rickets in 63 per cent of the cases at three months, and 77 per cent at four months. In the control cases there were clinical evidences in 56 per cent of the cases at three months and 89 per cent at four months. X-ray evidences were found in 73 per cent at three months, and 93 per cent at four months. Those receiving cod-liver oil showed evidence of healing by the end of the fifth month, while evidence of healing was delayed in the control group until the end of the seventh month. At from nine to fifteen months, the X-ray showed evidence of healing in nearly all of both groups. The conclusions reached were that cod-liver oil was of more value as a control than in the prevention of rickets. Some investigators, Hess, for instance, express serious doubts as to whether rickets is actually a food deficiency disease or not. Further studies, similar to those carried out by Wilson, will perhaps shed additional light on the subject; however, with the present knowledge of the problem, the routine administration of cod-liver oil to all young infants is probably a justifiable practice. Most infants will take it perfectly well, without the slightest disturbance. The dosage has apparently never been standardized. Bartlett believes that half a dram daily is sufficient as a preventive, and give this amount at one dose, preferably just before the night feeding. In the cases studied by Wilson, there did not seem to be any relation between the degree of rickets observed and the amount of cod-liver oil given; these cases received daily dosages of from one-half to four drams.

XUM

Digestibility of Artificial Foods.—If the foregoing principles are adhered to, the average normal baby can digest a formula that is worked out on such a basis. However, a brief discussion of a few points in connection with this phase of the subject might not be out of place at this time. It is generally conceded that the advantage of boiled milk justifies the practice as a routine measure in infant feeding. There seem to be some very strong points in favor of this practice; the curds are rendered much smaller, and it has been shown that a larger percentage of fat can be given than in raw milk, and what is probably still more important, boiling renders it bacteriologically safe. The effect on the anti-scorbutic vitamine (which is not entirely settled) can be easily corrected by the administration of orange juice. One of the popular objections is its constipating effect. Brennaman states that "the baby that is fed on cow's milk, either raw or boiled, and is reasonably constipated, is digesting its milk perfectly and that it is far more correct to say that raw milk is more laxative, because it is more indigestible." Morse and Talbott state that the heating of milk unquestionably predisposes to constipation, but only to a slight extent, and it is a far less common cause of constipation than is ordinarily supposed. Dunn expresses similar views, but goes further and says that such a claim has never actually been proved. The addition of cereal water, such as barley, has been shown to render the curds smaller, and may at times be used to advantage. The addition of alkalies, such as lime water, sodium citrate, sodium bicarbonate, and milk of magnesia, has been extensively employed, and apparently has a definite effect on the coagulation of casein, but is not very extensively used at this time. The more recent practice of adding lactic acid to cow's milk is apparently the most popular measure used in improving the digestibility of cow's milk at this time, and is a routine procedure in many clinics. There is apparently no argument against such a practice.

Other Foods During the First Year

Cereals may be given in most cases at six months, and often earlier. The practice that is most often followed is to begin giving it with the 10 A. M. bottle. It is best to start with small quantities, about two teaspoonfuls, pouring a little of the formula over it, and then giving the remainder of the formula afterwards. This may be gradually increased to two or three ounces by the end of two or three weeks, after which time it may be given twice daily. The second feeding may be given with the 6 P. M. bottle. The choice of cereal is apparently unimportant. Barley jelly is probably the most easily digested and is perhaps the safest to start with. It is made by adding one ounce of barley flour to twelve ounces of water and cooking for thirty minutes. Cream of wheat, properly cooked, and later, oat meal, are perhaps the most widely used, and it is a good plan to change from one to the other. By the end of the sixth month, broths or green vegetable juices, that is, the liquor from almost any green vegetable except cabbage, should be added. It may be given over stale bread, zwieback, or well-cooked rice at the 2 o'clock feeding, giving the bottle afterwards. Finely minced vegetables, such as turnip greens, spinach, or string beans, may be added a little later. Carrots, apple sauce or baked apples, baked or mashed potatoes, cauliflower, minced ripe banana, stewed prune pulp, pudding of rice, bread or tapioca, may be given with safety toward the end of the first year. In a recent very interesting article by Brennaman on this subject, he states that "his tendency for years has been to slide the whole sequence of additional foods farther and farther down the scale of months, always only because the baby seems to do better if he begins still earlier than he did before." He begins cereals at the fifth month and often earlier.

There is still a great deal left unsaid on the subject of feeding the normal infant the first year, but the chief purpose of this paper is to point out as briefly as possible the chief essentials that are to be borne in mind in taking care of the infant's nutrition the first year of its life.

Medical Arts Building.

NON-OPERATIVE TREATMENT OF CHRONIC OTITIS MEDIA SUPPURATIVE.*

By JAMES R. GORMAN, M. D., Lynchburg, Va.

In the consideration of the non-operative treatment of otitis media chronic suppurative, it is first necessary to mention the two general groups into which it may be divided:

*Read before the Virginia Society of Oto-Laryngology and Ophthalmology, in Petersburg, April 27, 1926.

First. Those cases in which the diseased process has invaded the temporal bone, in which type of case conservative treatment will not be sufficient to effect a cure.

Second. Those cases which it is the purpose of this paper to consider, namely, the cases in which the diseased process is limited to the mucous membrane of the middle ear and Eustachian tube, and in which there is no involvement of the temporal bone.

In a discussion of this type, it is necessary to take up the etiology of otitis media chronic suppurative. The primary cause of any case of chronic otorrhea, in my opinion, is traceable to improper handling or neglect, either by the patient, his family, or his physician, of an otitis media acute suppurative, exclusive of all other causes. I say this without consideration of the predisposing or active cause of the acute process. Practically one hundred per cent of the acute abscesses of the middle ear are caused by extension through, or by blockage of, the Eustachian tube by infections occurring with the acute exanthemata, infected tonsils or adenoids or both, acute and chronic nasal accessory sinus infection, acute naso-pharyngitis, acute tonsillitis, influenza, pneumonia, typhoid fever or any of the many ills of mankind which may cause more or less congestion in the naso-pharynx. Practically every case of chronic otorrhea has as its etiological factor a preceding acute otitis media suppurative, except those extremely rare cases of tubercular, or specific, or malignant involvement of the middle ear and mastoid. I make these statements because I wish to make the plea that, after all, the best treatment for chronic otorrhea lies in its prevention by proper handling of the case before it has become chronic. I doubt very much that anyone will dispute the statement that any case, which has gone on to a chronic running ear, could not have been prevented if properly handled during the acute process, either by early incision of the drum membrane, or by operation for the acute mastoid, which must have complicated such a case. The prevention of acute otitis media plays a vastly important part in the prevention of chronic otorrhea. By proper care of the nose, naso-pharynx, and throat during and after the acute conditions, which are the active causes of acute otitis, we have seen many acute abscesses prevented.

The usual picture presented is an acute naso-pharyngeal infection. The patient complains of stuffiness of the ears and possibly slight pain in ear. The ear drum may be, and often is, considerably reddened. The redness may be limited to the handle of the malleus. By shrinking the nose and mouth of the Eustachian tube at this stage and the application of silver nitrate solution, from 3 to 12 per cent in strength, and occasionally even gentle inflation, we have undoubtedly in many instances interrupted a process which, if allowed to go unattended, would have unquestionably resulted in an acute otitis media suppurative. We supplement this care by the use of astringent antiseptic drops in the nose, and oily astringent nasal sprays. The two drugs we have used with most success for this purpose have been one to five thousand aqueous solution of metaphen as nasal drops and chloretone inhalant, as a nasal spray. We use this in all acute nasal and naso-pharyngeal infections. This is especially efficacious in the acute exanthemata in preventing disturbances in the ears during these acute conditions. A chronic ear will simply not occur if the acute process is properly handled, except in those extremely rare cases resulting from tubercular, specific, and malignant affections.

A chronic otorrhea develops from the acute process as the result of improper drainage of the middle ear, usually resulting from delayed or inadequate incision of the drum membrane. It is a fact that the vast majority of acute ears, opened early and properly, will be sufficiently drained to effect recovery, but when the ear has been allowed to go long enough to rupture spontaneously, or incision is delayed to a point where the mastoid has become involved before incision is done, then frequently drainage from simple incision is not sufficient to take care of the situation. An acute ear which discharges freely longer than from two to three weeks has almost certainly resulted in an acute mastoid. A simple mastoid on an ear which continues to discharge copiously for this period of time is, in my opinion, conservative treatment, and simply provides sufficient drainage for the middle ear to recover and the drum membrane to heal without leaving a perforation. If a simple mastoid did nothing more than prevent a permanent opening in the ear drum, it would be an amply justified procedure. A perforated ear drum, even though dry, is a very undesirable result, and can be prevented by timely

XUM

incision, and if this does not relieve the condition a simple mastoid should be done before the condition has been allowed to go long enough to cause a permanent perforation or a chronic suppurative ear. We all know that an ear drum with a permanent perforation leaves a much impaired organ, and certainly very materially limits the activities of one so affected. If I had to make the choice between a permanent opening in my own ear drum, even though dry, and a simple mastoid competently done, I would by all means choose the latter.

As to treatment, after the ear has been allowed to become chronic, and there are a large number of individuals who have been allowed by neglect to develop this baneful condition, there is much that may be done. We are considering now the second group in which there is no definite bone involvement. First, we must select the cases for conservative treatment. We exclude from this group the cases in which there is involvement of the attic, those associated with chronic mastoid, and those with cholesteatoma, or evidences of bone involvement.

Every case of chronic otorrhea should have a complete physical examination, including the Wassermann and a test for tuberculosis. As a preliminary, the treatment should include the removal of all predisposing factors. Removal of infected tonsils, adenoids, the clearing up of all chronic nasal infection, and correction of conditions predisposing to repeated acute infections, such as a deviated nasal septum, and other conditions of the nose predisposing to acute infections must be done. All possible foci of infection must be removed and investigation of the teeth carried out.

The way having been cleared by a preliminary correction of these defects, and the middle ear having been cared for as much as possible during this process, the actual treatment of the ear condition is to be considered. The methods of treatment of this condition are legion. There are almost as many methods of procedure as there are individuals treating these cases. The several methods giving most satisfactory results in our hands have been varied as the case demanded. One of the most satisfactory methods we have used has been the use of plain dry gauze packing. First, daily care must be given. We cleanse the ear by using boric acid irrigation, if needed. Usually this is not necessary after the primary examination. Wherever possible, however, we use the cotton wound applicator in preference to the irrigation, getting the ear as dry and as clean as possible and finally drying it thoroughly by the use of 95 per cent alcohol. This is followed by placing a narrow strip of gauze packing, not more than one-half inch wide, drawn out to a fine point and all loose threads removed, through the perforation if possible into the middle ear. Most of the time the perforation is sufficiently large to permit this being done. This is removed and replaced in twenty-four hours. The removal of all polypoid and granulation tissue, if present, should be accomplished before starting this or any other treatment. The polyps are best removed under gas anesthesia, following the application for ten minutes of cotton saturated with adrenalin chloride one to one thousand. Removal may be done with an aural snare or a ring curette. The granulations, when present, are satisfactorily reduced and finally removed by the use of various cleansing methods, followed by use of silver nitrate solution in increasing strength up to 25 or 30 per cent if necessary. We have also used with considerable success the ether treatment. This consists of the usual cleansing processes, followed by the instillation into the ear of about fifteen drops of ether, which is allowed to remain in the ear until complete evaporation takes place. Ether boils at about or a little below body temperature, so that the time of evaporation is considerably shortened. In this like all other cleansing and drying treatments, it must be done daily. It is sometimes necessary to use the ether twice daily to obtain best results. The patients may be allowed to use the ether themselves for the second daily treatment. Another very satisfactory treatment, especially in children who have had a discharging ear for from four to six weeks, which, if not chronic, certainly borders the chronic type, has been the use of the following:

Hydrargyri Bichloridi	gr.ss
Acidi Boraci	gr.x
Alcohol (75%)	ʒi

This should be instilled into the ear twice daily, following complete and careful cleansing with boric acid solution.

In reviewing the literature for the past two years, it is very definitely agreed by most of the authors that 50 per cent of the cases of

chronic otitis media can be cured by conservative methods, and that a great many more are considerably benefited. In a paper of this kind, it becomes necessary to discuss some of the methods of treatment suggested and carried out by the authors of some of the more recent articles. Practically every article reviewed advocated one or more of the various antiseptic and drying methods. David Smith and Justina M. Hill, of Johns Hopkins, made numerous tests in their work in which they used cultures from purulent otitis media cases in testing the bactericidal effect of several drugs and dyes. They employed acid fuchsin, neutral acriflavine, gentian violet, mercuric chloride and mercurochrome. It was found the meroxyl, or sodium mercuribenzophenone sulphate, acted principally on gram negative organisms, and gentian violet acted largely on gram positive organisms. These two drugs cannot be mixed. The pyocyaneus resisted both these drugs. Acetic acid was then employed. It acted almost like a specific in pyocyaneus infection. It was also found that acetic acid could be combined with meroxyl. Schwartz[1] simplifies considerably this method of treatment by the following procedure in the use of which a culture or smear is not necessary: "After the external auditory canal and middle ear are thoroughly cleaned with peroxide, half a medicine dropper of the meroxyl and acetic acid solution is introduced into the external auditory canal. This solution is washed back and forth in order to force the solution into the middle ear, so that it may act directly on the organisms. The ear is then dried by suction and by means of cotton applicators. A few drops of the gentian violet and neutral acriflavine combination are then instilled into the ear, and a piece of cotton placed in the external auditory canal to prevent the medication from flowing out. This is left undisturbed until the next treatment." Schwartz[1] takes up the oft-repeated objection to the use of hydrogen peroxide and states the belief that it is groundless and that there had been no complications from its use in his hands. Bozer[5] has reported its use in one hundred and ninety cases without any mastoid complications.

The results obtained by Schwartz with this method of chemo-therapy have been very good. The neutral acriflavine, gentian violet, mercurochrome, and brilliant green are all made up in 20 per cent alcohol and are used in 1 per cent strength. The meroxyl is used in .05 per cent and is made up entirely as a watery solution. Meroxyl is non-staining. Brilliant green, a dye not yet employed to a great extent, has been found to be of use in combating streptococcic infection. A more recent drug is acri-violet, a mixture of acriflavine and gentian violet, which is nothing more than a combination of the two drugs employed by Schwartz.[1]

Zinc Ionization.—Haskins[2] reports in abstract Friel's[3] work on zinc ionization: "To determine which cases of chronic otorrhea are suitable for the application of this method, we have to decide on the cause of the chronicity. (1). Is it due in any particular case to the irritation of septic fluid in the ear? (2). Is it possible to fill the entire cavity containing the septic fluid with zinc solution, or is a portion of the cavity inaccessible without operation? (3). Is there any factor in addition to the sepsis responsible for the continuance of the suppuration, such as polyps, granulations or cholesteatoma? (4). Are areas, the nose, naso-pharynx and mouth, which communicate with the ear, in a septic condition? This would make reinfection of the ear inevitable, and a continuance or a recurrence of the discharge almost unavoidable." Friel[3] estimates that "the percentage of cases of chronic otorrhea in children, due to simple tympanic sepsis, is approximately 50 per cent. These cases are cured in two to three visits. In a further 25 per cent, the otorrhea is kept up by sepsis, with polypi or granulations, or by muco-purulent rhinitis or inflamed tonsils. In these cases it is desirable to convert the dual or triple condition of sepsis plus polypi, or sepsis plus rhinitis, etc., into the simple condition, sepsis, before attempting to sterilize the middle ear by ionization. These patients will require on an average of from six to eight visits. The remaining 25 per cent are those in which there is sepsis in a position where it is not possible to introduce the zinc solution without some form of operation. These include most of the mastoid and attic cases."

After a very careful study of the literature for the past four years, I find that most otologists agree that 50 per cent of all cases of chronic ear suppuration will clear up with efficient conservative treatment. In practically

XUM

all the literature reviewed, the authors are using one form or another of the antiseptic, drying, and suction methods of treatment. Of the antiseptic methods, the one particular method coming in for most praise generally was ionization; and in his article published in 1925, Stephen Young[4] very aptly sums up the general opinion of zinc ionization in the following manner: "More recently ionization has come to the aid of the otologists. Ionization consists in introducing into the tissues, by means of electricity, one or the other of the salts known to have an inhibiting influence on the growth of septic micro-organisms. There is also an exchange of ions in the tissues, as the result of the application of a continuous electric current. Sufficient evidence has been collected to show that ionization undoubtedly occupies a middle place in the treatment of chronic suppurative otitis, and that a certain number of cases, not responding to the ordinary conservative methods of treatment, give good results with ionization, and thus prevent the necessity for at least some mastoid operations."

Bozer[5] studied the results of one hundred and ninety cases treated at the Mayo Clinic. The treatment was essentially a combination of the antiseptic alcohol and caustic methods described by Politzer, varying in each case with the type of disease process. The usual procedure carried out was the instillation into the ear of ten to fifteen drops of hydrogen peroxide, which was allowed to remain for several minutes. The ear was then dried with cotton wound applicators, and a 50 per cent solution of alcohol, containing 3 per cent boric acid and 5 per cent mercuric chloride, was then instilled into the ear and allowed to remain a few minutes. This was also wiped out and the drying process completed by directing air under pressure into the aural cavity, taking care that it was not sufficiently strong to produce vertigo. No other type of treatment was used. About 50 per cent of the one hundred and ninety patients responded satisfactorily to the treatment, and remained in good condition for a period of at least one to two and one-half years. The average duration of treatment of patients who later remained in good condition was three and six-tenths weeks.

Fox[6] reports a series of cases treated by ionization. The average number of treatments per case was thirteen and three-tenths, ranging from five to twenty-nine. At the beginning the treatment was given every other day, commencing with three milliamperes for two minutes. If there was no reaction after two or three treatments, the time was increased to fifteen minutes, the current being the same. From two to four minutes should be consumed in reaching the maximum current. The discharge was stopped in nearly every case. The technique consists in first cleaning and drying the ear. After drying with cotton, boric alcohol is applied. This is followed by filling the ear with 1 per cent zinc sulphate solution, in which is placed the positive zinc electrode in the center of the canal. This should be done with care, for, without this precaution, an ulcer may be produced at the point of contact. The patient's hand is placed in a container of water, to which is attached the negative pole. The galvanic current is now cautiously turned on very gradually, and when the ear starts aching, the current must be turned back. The cases best suited to this treatment are the old chronic cases with large perforations.

After extensive reading and observation, I find there is no routine treatment for the chronic running ear except, possibly, by preventing them.

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Medical Arts Building.

THE USE OF ALCOHOL IN MEDICINE.*

By CHARLES WILLCOX, M. D., Washington, D. C.

The use of alcoholic drinks and the beginning of man were probably synchronous. The ancients looked on wine as one of the great gifts of the gods, though the Greeks appear to have abused this gift by adding to their wine such flavorings as sea-water, resin, aloes, wormwood, and other preparations. The Egyptians made various wines fifty centuries before the Christian Era, and Osiris is believed, on his travels, to have devised the preparation

*Read before the Section on Internal Medicine, Medical Society of the District of Columbia, May 28, 1926.

of a beer from fermenting grain, for use of those peoples who were not so fortunate as to possess vineyards.

When and how wines, beers and liquors were first used as medicines is more or less hazy legend, but in more recent times, that we now call the good old days of heroic therapeutics, when calomel and quinine were used in enormous doses, we know that alcohol was considered to be a panacea for the cure of very many diseases, and to be a potent preventive of infections. These ascribed virtues were due in the former cases to the mistaken belief that alcohol was a stimulant, and in the latter cases to the still more mistaken belief that alcohol in the body acted as a barrier and greatly added to the defense against all diseases. An incident following the epidemic of cholera in Altona, Germany, is interesting not only as tending to shatter the belief in the protective power of alcohol, but as possibly indicating the beginning recognition of "carriers" before the days of "Typhoid Mary." Three robust male nurses had done yeoman's work in caring for cholera cases, had escaped infection and, while enjoying a well-earned rest, decided to celebrate, during which celebration they indulged unwisely in too much drink, with a resultant irritation of the intestinal tract and a lowering of their resistance, thus giving the comma bacilli, that they had for weeks doubtless been carrying in their healthy intestines, a chance to assume a successful attack.

From the day when alcohol was considered a potent cure-all, it gradually came to take its proper place in therapy, a place between therapeutic nihilism and the therapeutic pedestal it formally occupied. At the time its limitations and virtues were better understood, a law was suddenly enacted that not only makes the use of inferior preparations in medical practice much more probable, but makes the most beneficial use of any preparation not only difficult and often embarrassing but at times impossible. Alcohol at once assumed undue importance and notoriety and now has the unique distinction of being the only liquid medicine patients persistently advise their physicians to prescribe for them. The psychological effect on many patients and on more "would-be-patients" is unfortunate. Most of them have a fear, not of the possibility of wood alcohol being an ingredient, but of fusel oil which they hear so much about. Most of them would be greatly surprised if told that fusel oil is not a single substance, but is a mixture of the higher alcohols, mostly the amyls, that come over in small amount in the distillation of all good liquors; and that in ageing in charred casks, while some of the lower alcohols and some of the water evaporate, the higher alcohols do not; therefore, in good old seasoned liquor there is a larger percentage of fusel oil than there was in the greener liquid. The amount in good liquors is so small it can be ignored from a therapeutic standpoint; for instance, one analysis of 92 litres of Cognac gave 206 grams fusel oil or about 1/5 of 1 per cent, and in these proportions:

Propyl	12 per cent
Iso-butyl	3 per cent
Amyl	85 per cent

The irritating effects and disagreeable taste of freshly distilled liquors are due not to fusel oil but to some volatile substances, principally furfurol, that, after prolonged contact with the charred interior of barrels, forms esters to which is due the mellowness or "bouquet" of old whiskey and brandy. An analysis of 3 star brandy showed 110 parts esters to 100,000 parts of absolute alcohol, while 1 star brandy showed but 97 parts.

Alcohol has been with us for centuries—it is still with us—and it is only reasonable to assume it will always be with us. It has been, is being, and will be used in moderation by millions of intelligent men and women, and with no apparent harm. Millions have used it excessively and with dire results. These uses and abuses are, however, in no way therapeutic. As physicians we must look on alcohol, not with the eyes of the enthusiastic optimist, Omar Khayyam, nor with the eyes of the sombre pessimist who wishes to consign its users, with no exceptions, to jail. Unreasoning bigotry can only harm our practice, and we must look on alcohol with unprejudiced, rational eyes—as we do, for instance, on belladonna or epinephrin, simply realizing its virtues and its dangers—very easy after all.

Let us consider briefly what would happen if the world's supply of alcohol was destroyed and its manufacture stopped. It is no exaggeration to say it would relegate the drug business to the dark ages. Alcohol is the only known agent that will extract the valuable and

XUM

potent medicinal principles of the vegetable kingdom, leaving behind the inert, valueless mass. Manufacturers have, wherever possible, substituted acetone, water, glycerine, or syrup, but as yet no agent has been found that can replace alcohol. It is not only an invaluable extractor, crystalizer and solvent, but it is an ideal preservative. Moreover, alcoholic solutions do not freeze and break glass containers, and as a solvent it has a pleasant odor and a not disagreeable taste. In addition to its being the ideal and as yet unreplaceable solvent and preservative of drugs, it is a basic agent in the making of our precious anaesthetic ether. Furthermore, yeast, one of the by-products of its manufacture—as conversely alcohol may be considered a by-product in the making of yeast—is more valuable therapeutically than is generally realized, not so much for its recently popular use in a more or less haphazard way to furnish vitamines, but for the making of the staff of life. Bread, of course, can be made with baking powder, but it is not then wholesome yeast raised bread. These uses of alcohol, exclusive of its virtues as a medicine in selected cases, show that it is essential in practice. It can be made in practically unlimited quantity, and very cheaply. The excessive cost of ethyl alcohol is of course due to its very heavy taxation, and not to the cost of its manufacture.

The recent literature on alcohol is stupendous, and nearly all of this mass is on its abuse, an old story with which the profession and the laity have been familiar for many years. Very many carefully conducted experiments have been done on animals, and on physiological secretions, but these must be interpreted carefully when trying to reach correct conclusions as to alcohol's effect on man,—for example, its effects on the gastric or duodenal contents in a test tube are very different from its effects on the same contents in their proper habitat. The alcohol remains in the test tube and continues to act on non-mobile fluids. In the healthy stomach it is rapidly absorbed as alcohol into the blood stream, and still more rapidly absorbed from the duodenum. In experiments on animals, the psychological factor, so important in man, is missing, and it is difficult to form any reasonable conclusion of its effect on man from careful experiments that show, for instance, its effect on the intellectual behavior of tadpoles.

To appreciate its therapeutic effects, we must be guided above all by careful clinical observation at the bedside, the most valuable criterion; then by logical interpretations of laboratory experiments on human beings; and, lastly, by pathological post-mortem findings, differentiating the findings due to alcohol alone from those due to numerous other factors.

Before considering the uses of alcohol, it is well to consider its contraindications. It should not be prescribed:

As a placebo;

For robust young adults unless conditions are alarming;

For reformed drunkards except in cases to be mentioned later;

For epileptics;

In cases of acute gastritits, hepatitis, or nephrititis, as a rule.

Finally, no more should be prescribed than is indicated, nor should its use be continued after it has performed its mission; in other words, we should use alcohol with the judgment we use digitalis, always having in mind its easily acquired habit, and the ultimate depressing effects of large doses. While it will often help a nearly exhausted person in the last few minutes of supreme physical effort necessary to attain an object, it is a most serious mistake to give it with the hope that it will carry one through prolonged exertion, especially in very hot or very cold weather.

Uses of Alcohol

Local: Alcohol is an excellent sterilizing agent for very delicate instruments that might be injured by other methods. It must not be forgotten that dry micro-organisms are not destroyed by alcohol; they must be moist; therefore, ordinary alcohol best in about 60 per cent solution, is effective, while absolute is not.

Recently its use as a gargle has been reported favorably as a prophylactic measure during exposure to infections of the upper respiratory tract. The older method of using a weak solution of tincture of iodine for the purpose is probably as effective and is less irritating. If mercurochrome or tincture of iodine are not on hand, it is a very good substitute for the

cleansing of wounds. It is advisable for use on the skin before vaccination.

It is most soothing and beneficial as a "rub" when the skin is hot and dry, and nothing is better as a preventive of bed sores in bed-ridden patients.

Internal: The internal use of alcohol is by far the more important. Its absorption from the healthy stomach is rapid, occurring in from one-half to two hours if the stomach is empty and the alcohol is in concentrated form. It enters the blood stream unchanged and is the only food absorbed unchanged from the intestinal tract. It is rapidly oxidized, only about 2 per cent of an ordinary dose being excreted by the kidneys and lungs. If a large quantity is taken at once, the amount so excreted will not exceed 10 per cent. It has a high caloric value, about 80 per cent of that of fat.

Mallanby made determinations on man of the fate of alcohol after very large doses. He found a martyr to science, a man of 70 kilos, and gave him whiskey containing 171 c.c. of absolute alcohol, once on an empty stomach, once 2 hours after a pint of milk, and once diluted with a pint of milk. He found in the experiment of whiskey on an empty stomach 100 c.c. blood had 330 c.mm. of alcohol or 1/3 of 1 per cent after one hour. Thereafter it gradually decreased. One hour after drinking whiskey on the milk diet the alcoholic content was 220 c.mm., and 1 hour after drinking whiskey mixed with milk it was 160 c.mm. In the two later cases, instead of reaching its maximum blood content in 1 hour, it took 2 hours. Thence the descent of the curve was the same in all cases. These experiments show: The rapidity of the absorption of strong whiskey from the empty stomach; the slower absorption from a partly filled stomach, and especially the efficacy of milk when mixed with alcohol in slowing the absorption of the latter. They show the rapidity with which oxidation occurs, *i. e.*, at the rate of 10 c.c. absolute alcohol per hour in the average sized adult. They show chemically what had been known clinically, the reasons for giving, therapeutically, alcohol well diluted, and in small doses, over a long period; for instance, 10 c.c. of alcohol is oxidized in 1 hour after its absorption by the blood stream, while it would require 10 hours to oxidize 100 c.c.

Alcohol has a depressing effect on the higher centres of the brain, thus checking their usual inhibitory action on the lower centres. On respiration its effect is therapeutically negligible. It appears to effect the circulation indirectly by dilating the peripheral vessels, thus balancing the circulation, lessening the work of the heart, and tending to lower blood pressure. It has no effect on the temperature save by its causing increased radiation by virtue of dilating the peripheral vessels. Its effect on digestion is due to an increase in gastric secretion, which is to some extent counteracted by its inhibitory action on the gastric ferments.

While usually given well diluted, there is one condition in which the administration of strong spirits, good old brandy above all, often acts like a charm,—that is in painful flatulence. Wine has been aptly called "The Milk of Old Age," and here is one of its most useful fields. In feeble old men and women who have cold skins, who have little appetite, who often have what is called "atonic dyspepsia," and who seem to have lost much of the natural interest and joy in life, a little alcoholic therapy at meal times will greatly aid digestion, will produce a genial glow to replace their chilly feeling, will make them take a more cheerful view of life, and minimize their cares and worries. Above all, by its hypnotic power, it will give them a good night's rest. If they desire a special form of alcoholic drink, it is wise to give it, if procurable.

To consider the other extreme in life alcohol has a very well-defined role in treating babies and young children. While we have by better feeding tremendously reduced the number of what are familiarly known as the summer diarrheas of babies, yet they do occur, and in cases of collapse very gratifying results have followed the giving of good brandy in small frequently repeated doses. It appears to act in these cases not only as an evanescent stimulant, but especially as an easily and rapidly digested food, supplying by its rapid oxidation that energy and heat that temporarily cannot be given the enfeebled little body by the usual infant foods. It adds nothing to the intestinal tract to decompose or ferment. It has perhaps a less well-defined role in the pneumonias of children, but from my observations I believe it has carried some of my little patients past critical periods, and saved them.

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In Asiatic cholera, where extreme dehydration appears even more rapidly than it does in severe cases of milk-feeding injury in babies, I have had gratifying results in some apparently hopeless cases, by giving frequent doses of whiskey or brandy well-diluted—and its beneficial effects I believe can be ascribed to its food value as a readily combustible fuel to supply energy in crises. At all events, the cold clammy skin gradually became warmer, the dehydration was gradually overcome, diarrhea lessened, and the alcohol seemed to be the agent that supported the patients until their anti-bodies could assume a successful offensive against the comma bacillus.

Amongst the laity alcohol has a great reputation as a cure for the poison of snake bites. Aside from its mental effect in soothing the mind of the one bitten, it does no apparent good. On the other hand, due to its reputation, it is often taken in stupendous amounts, and in the few cases of rattle snake bite that I have treated, the acute alcoholic poisoning was a more serious factor than the snake venom. In selected cases of pneumonia, alcohol is invaluable; in some, occurring in alcoholics, it is mandatory. In those with extreme depression, with a feeble heart, low muttering delirium, brown, dry tongue, and distended abdomen, alcohol given in large amounts over a period of several days has saved many lives. The heart improves, the delirium gives way to a comparatively calm restfulness and optimism, and from a rapidly sinking maniac, your patient is transformed into a more rational being, feeble yet, but now endowed with that hope and feeling of well-being that will carry him on. Typhoid fever, now much rarer, thanks to better sanitation and to vaccination, often showed a clinical picture like that of the pneumonias and with the same delirium; alcohol proved of equal value in such cases. Generally it is beneficial in septic cases, surgical as well as medical.

Alcohol has given good results in some cases of diabetes. Being non-nitrogenous, it cannot replace the proteins that are broken down in the body, and it cannot replace insulin in the burning of sugar. It can, however, reduce the dose of insulin by acting as a substitute for part of the carbohydrate in the diet, as it is excellent fuel for the burning of fats. It does not become glycogen and, as it is not ketogenic, it does not add to the risk of poisoning the patient.

It has often been found that men after hard labor suffered from severe cramps if they quenched their thirst with pure water. There is a great loss of body salts through the sweat, and water alone gives rise to a mild poisoning. When cider, beer, or diluted wine is used as a thirst quencher, these cramps do not occur.

Undoubtedly the empirical use of mild alcoholic drinks is based on centuries of experience in the mines and fields of Europe and explains the French peasants' use of his wine and water after hard labor. The use of wines in Europe, far from doing harm, has done good, not only by their psychological effect, but by improving the quality of very poor water. They drink in moderation, and the greatest insult you can offer a Spaniard is to call him drunk. The only ill effects of alcohol I have seen in France were inNormandy where they drink very ardent spirits in the form of "Calvados," or apple brandy, the green preparation being similar to our moonshine. Mothers have sometimes given it to babies to quiet them, which it has effectively done with the same disastrous results that some narcotic so-called "soothing syrups" have had in quieting babies in our country. It is this abuse of spirits in Normandy that has resulted in a move in France for temperance, not prohibition. They desire simply to improve the local condition as they once improved a more general condition when they stopped the use of absinthe.

Alcohol has been of benefit even to athletes in training. While smoking has been cut out, a small amount of ale, wine, or spirits has been allowed with dinner. The athlete has better enjoyed his meal, felt better, slept better, thoroughly oxidized his small dose during the night and been in better condition the following day.

Professor Pearl, of Johns Hopkins, in a careful and unbiased study, has shown that, while heavy drinkers die earlier than total abstainers, those who use alcohol in moderation live slightly longer. The psychological factor of a gentle euphoria may play an important part in this.

Nausea, especially that most distressing indication of sea-sickness, is often relieved and even cured by alcohol when nothing else has had any effect. Champagne has been the most

efficient form. Brandy has been almost as good, and I have seen a number of cases respond to Benedictine. Why Benedictine should act so happily I cannot explain, save again on psychological ground. It is, however, often impossible to carry out this treatment on United States Liners.

The greatest value of alcohol, then, lies in its hypnotic and psychological effect. Nothing can replace it in relieving the worry, distress, and anxiety of the patient, and in giving him that feeling of repose and well-being that plays so vital a part in helping him over a crisis or in rendering a case of helpless suffering more bearable.

Unfortunately, we are now handicapped greatly in not being able to prescribe it in the most beneficial way. Not only are we not as sure of our preparations as we were, but we are limited as to the amount we can use. A patient may require, for example, two litres of whiskey or brandy every 5 or 6 days to save his life. It would be just as sane and just as merciful to limit to one grain the quantity of morphine we could give in a day to relieve the agony of a patient dying with cancer of the tongue. Even with our handicaps, we can still use alcohol with great benefit in carefully selected cases. We should use it fearlessly and with the good judgment we use other drugs, always bearing in mind that while it can be a most vicious master, it is, and let us hope always will be, a most valuable servant.

2017 *Q Street, Northwest.*

WHY STANDARDIZE THE HOSPITAL?*

By P. W. BOYD, M. D., Winchester, Va.

During the few years of the existence of the Valley Medical Society, I have been deeply interested in its progress and worth to the medical men in the Shenandoah Valley and especially to its captains who have guided the society's destinies and have been instrumental in making this one of the best societies in the state. Our progress must continue and we should realize that progress depends upon union.

There is no one agent to bring doctors closer together than the hospital. All of us are connected directly or indirectly with hospitals, either in the management of the institution or the supply of patients to the institution.

*President's address before the Medical Association of the Valley of Virginia, at Harrisonburg, May 27, 1926.

The hospital today bears a complex relationship to the lives of the people in its neighborhood. Into its walls come the rich and the poor, the learned and the ignorant, the normal and afflicted. They all come with one definite need—to be helped mentally or physically. They come, as mankind has always come, to a healing spring, a pool, a river, or a shrine,—where once they found a priest or prophet, they now find a doctor or a nurse.

Over how wide a field can a hospital extend its influence? The answer will depend upon many things. Service to the patient is the major function and includes adequate care and every reasonable attention to his physical and mental comfort.

It must be so organized, equipped, personneled and controlled that the patient surrounded by the best there is in medical science will receive—

1st. An early and accurate diagnosis;

2nd. The most efficient and effective treatment;

3rd. Complete and permanent restoration to helath, if possible, in the shortest time and most comfortable manner, thus fitting the person to return to producing capacity and thereby adding to the wealth of the nation.

Between the years 1913 and 1918, the American College of Surgeons made an exhaustive survey of hospitals in the United States and Canada. This information, when compiled and considered, revealed marked deficiencies so far as rendering the highest quality of service to the patient.

After careful deliberation there was established what is now recognized as the *minimum standard*. This standard consists of simple, concise, definite principles, adaptable to any institution, based primarily on *service to the patient*, and reads as follows:

"1. That physicians and surgeons privileged to practice in the hospital be organized as a definite group or staff. Such organization has nothing to do with the question as to whether the hospital is 'open' or 'closed' nor need it effect the various existing types of staff organization. The word *Staff* is here defined as the group of doctors who practice in the hospital, inclusive of all groups, such as the 'regular staff,' 'the visiting staff,' and the 'associate staff.'

"2. That membership upon the staff be restricted to physicians and surgeons who are

(a) full graduates in medicine in good standing and legally licensed to practice in their respective states and provinces, (b) competent in their respective fields, and (c) worthy in character and in matters of professional ethics; that in this latter connection the practice of division of fees, under any guise whatsoever, be prohibited.

"3. That the staff initiate and, with the approval of the governing board of the hospital, adopt rules, regulations and policies governing the professional work of the hospital; that these rules, regulations and policies specifically provide:

(a). That staff meetings be held at least once each month. (In large hospitals the departments may choose to meet separately).

(b). That the staff review and analyze at regular intervals their clinical experience in the various departments of the hospital, such as medicine, surgery, obstetrics, and the other specialities,—the clinical records of patients, free and pay, to be the basis for such review and analyses.

"4. That accurate and complete records be written for all patients and filed in an accessible manner in the hospital, a complete case record being one that includes identification data; complaint; personal and family history; history of present illness; physical examination; special examinations such as consultations, clinical laboratory, X-ray and other examinations; provisional or working diagnosis; medical or surgical treatment; gross and microscopical pathological findings, progress notes; final diagnosis; condition on discharge; follow-up, and, in case of death, autopsy findings.

"5. That diagnostic and therapeutic facilities under competent supervision be available for the study, diagnosis and treatment of patients, these to include at least: (a) A clinical laboratory providing chemical, bacteriological, serological and pathological services; (b) an X-ray department providing radiographic and fluoroscopic services."

The standard as described above has been presented annually for eight years to the active general hospitals of the United States and Canada, and approximately the College has spent one-half million dollars on this work. As a result of this work hospitals have been increased in efficiency over 50 per cent during this period.

An approved list of hospitals is published annually. This frequently serves as a guide to patients who are seeking hospital service, knowing that in the approved institution they are assured of every thing that is ordinarily necessary for their comfort, safety and efficient treatment.

Already the American Railway Association has directed its fourteen thousand surgeons to select for their patients approved hospitals.

Young women entering the profession of nursing give preference to the schools of nursing attached to the approved hospitals.

Many philanthropic and governmental organizations called upon to assist hospitals financially are frequently influenced in their decisions if the hospital is or is not on the approved list.

The ultimate aims of hospital standardization and what is now being accomplished are:

1st. Shortening of the average number of days that the patient stays in the hospital, the average time now being from twelve to fourteen days, as against fourteen to eighteen days formerly, due to better treatment and focusing all the services of the hospital upon the patient.

2nd. The elimination of incompetent and unnecessary surgery. It is interesting to note that the quality of surgery is much higher, due to better means of diagnosis, increased numbers of consultations, group study of clinical conditions and more modern technique and procedures. Formerly many abdomens were opened in order to make a diagnosis, but now the splendid clinical facilities in hospitals enables the surgeon and physician to make his diagnosis more accurately.

3rd. Through better supervision and checking up and improved technique, the number of infections and complications in hospitals has been very noticeably decreased.

4th. Lowering of the hospital death rate, which was formerly 40 to 60 per 1,000 patients treated, has dropped to from 20 to 30, or even less in some instances.

Staff Organization

Staff organization should be done with the greatest care. Hospital privileges should not be extended promiscuously. The medical staff demands just as much care in its relation as does the surgical staff. Only full graduates of medicine in good standing and legally licensed to practice in their respective states should be

members of the staff. We must declare without reservation that the hospitals be kept for the real scientific, thoroughly trained profession of medicine.

The practice of fee-splitting is unreservedly condemned. While it may not be an issue in all communities and all hospitals, it is nevertheless required that the medical staff and board of trustees of all standardized hospitals go on record against this practice.

Staff meetings must be held at regular intervals at least once each month, and all members privileged to practice in the hospital should attend the regular staff meetings for the intelligent discussion of his clinical activities. The doctor who is not interested in attending these meetings should not have a place in an approved hospital. Unavoidable absence is of course recognized. The average attendance should be at least 75 per cent in any hospital.

The staff meeting must not be of the County Medical Society type. The discussion should be limited to the happenings within the walls of the institution and must by all means be treated as confidential. The entire meeting should be characterized by a generous spirit of giving and receiving, where knowledge is pooled for the benefit of all present and particularly for the patient. To quote from the last hospital standardization report, "find the facts, filter the facts, focus the facts, fix the facts, and face the facts fearlessly."

Knowledge is gained in two ways, by imparting to others and by others imparting to us. Tell about the patient who much to your disappointment died during the course of treatment. Solicit opinions and comments from listeners in order that you may gain information from their experiences to help with the next case of a similar nature, always keeping in mind better service to the patient, increasing clinical efficiency, and adding to your fund of knowledge.

Complications and Infections

Complications and infections should be traced to the cause and preventive measures recommended as deemed necessary. There is nothing worse for the doctor and hospital than infection and complications. They keep the patient in ths hospital longer and tend to bad end-results and cause the institution and patient extra expense.

Certain unimproved patients sent out of the hospital are a very bad recommendation for any institution and one should be careful not to discharge a patient from the hospital until he feels sure convalesence is assured. The staff should determine whether or not every facility was used in making a proper diagnosis and in rendering treatment before the patient was discharged.

The staff conference, if properly conducted and with the right spirit and object in view, cannot help but be of all-round benefit to the patient, the doctor, the hospital and scientific medicine generally.

Case Records

No hospital can maintain its standard without adequate case records. The conscientious doctor who wants to do thorough work should not be familar with the terms "negative" and "normal" which so frequently constitute the bulk of a case record.

Too many operations are carried out before there is a proper estimate of the patient's reserve to carry through under the extra strain.

When a doctor examines his patient, he has three things to find out:

1st. What is the pathological condition?

2nd. What is the physical reserve of the patient?

3rd. What part has he to play in re-establishing the normal balance or maintaining that which is best for the patient under the circumstances?

A careful study of the recorded facts can alone determine these points. Up-to-date, complete, true records undoubtedly reflect the character of the hospital and particularly the medical staff working therein.

The day has passed when a doctor can ignore the clinical laboratory. The methods of teaching medicine are different and we are now dependent upon the laboratory for an accurate diagnosis. There must be a close contact between the clinical laboratory and the medical staff. The laboratory should be in a location accessible to all members of the staff, where contact is much more frequent. It should be opened to the clinician at any time he wishes, and he should always receive as much personal attention as can be afforded him.

Routine examinations should nowadays be carried out in the hospital. The following are given the most consideration:

(a). Blood examinations—red, white and haemoglobin.

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(b). Urinalysis.
(c). Blood coagulation.
(d). Wassermann.
(e). Tissues from operations.

I believe the most satisfactory method to adopt for laboratory charges is a flat rate, the private room patient being charged a higher rate than the ward patient.

Hospitals continue to improve their X-ray laboratories. Many new departments with modern equipment have been added, benefiting patient and physician.

I would like to urge better co-operation and closer contact between the doctors and roentgenologists. It is amusing to see how often a patient is sent into the X-ray laboratory for a complete gastro-intestinal examination and the doctor expects a complete report within a few minutes. If we want an intelligent report, the roentgenologist must be given time,—at least twenty-four hours for a gastro-intestinal examination.

Aseptic technique has made surgery a spectacular art. It has given us knowledge of pathological processes in the living body, and this has added much to the knowledge of all diseased conditions, greatly advancing all internal medicine though it has had a tendency to fix the public eye on surgery and to minimize the work of the internist. As a result, it has created the impression that hospitals are only essential for surgical work. This distinction should not be made, for one is equally as important as the other and should be viewed as group work.

The great minds that have brought surgery to its distinguished place could never have done so had it not been for the helpful facilities with which they are surrounded.

Internal medicine is coming into its own. Observations concerning endocrine gland secretions and their influence on body and mind development, and also on body function, are creating new and broader interest in internal medicine.

The internist must have in his work an equipment for serving his patients as well suited to his needs as the surgeon requires for his.

The management of a hospital is helpless if the staff does not co-operate whole-heartedly. Consequently, it is up to the profession to give liberally of their time and talents if they would see it succeed.

Hospital standardization means a better service to the patient through the advantages of a thorough and scientific investigation and treatment; hence better returns are given the community. When a patient enters the hospital, let the question be: "What service can be rendered?" not "How much can you pay?"

SUDDEN DEATH.

By WYNDHAM B. BLANTON, M. D., Richmond, Va.

Unicellular organisms, bacteria for example, may live eternally, because multiplying as they do by fission, they are perpetuated in their descendants in a way which does not admit of death except by accident. Metazoa, on the other hand, man included, all suffer death, somatic death, though the sex cells in their descendants are endowed with perpetuity. Adami can conceive of an ideal body which does not die, barring accident. The cause of somatic death to him lies in the asynchronous development of the various organs, the atrophy of one after another, imposing burdens upon the surviving organs which ultimately exceed their reserve, resulting in death. This is physiological death in ripe old age. Pathological death, on the other hand, may occur at any period of somatic existence and may arise from mechanical, physical, chemical or bacterial causes. Pathological somatic death may be one of two orders—slow and expected, or sudden and unexpected. It is the latter category we wish to examine, namely, sudden unexpected somatic death.

Definition

Death is difficult to define. Only when the great triumvirate, heart, lungs and brain, cease to function and the signs of decomposition set in, are we justified in such an assertion.

The coroner has both sudden and unexpected death to deal with. To him the man who drops dead and the man who is found dead are equally interesting. In a sense sudden death may be entirely circumstantial. Thus, the tramp who is found dead in the park with pneumonia or who stumbles into the ward to suddenly and unexpectedly expire and at autopsy is found to have meningitis.

There is a saying, *cor ultimum moriens.* Eighty years ago the doctrine of Bichat prevailed. Death either was from (1) the *heart* (syncope); (2) *brain* (coma), or (3) *lungs*

(asphyxia). Lesser, in Germany, claimed that 66 per cent of his deaths were from the heart. Brouardel, the coroner of Paris, in a delightful book entitled "Death and Sudden Death," gives an elaborate classification. The subject has been indifferently considered of late. The few recent discussions in the literature have chiefly emanated from British coroners.

There are certain insurmountable difficulties in the search for a cause of death. They are inherent in the physiological cause of death rather than the anatomical. When is a man dead? We know that tissue can be cut from a cadaver hours after "death" and the cells of this tissue can be made to grow on the proper media. The coroner of Paris reported the case of a criminal whom he saw beheaded. One hour later, on listening over the precordium, he could still hear the heart beating. The drowned have been resuscitated as long as thirty minutes after submersion. The very criteria of death, heart beat, respiration and tissue viability, are thus often misleading. We should not be surprised to find the cause of death frequently shrouded in mystery even at autopsy. On the other hand, it is very important to know and not guess at the cause of death. The autopsy usually reveals its cause.

Death may be sudden and instant. This type of death results from (1) massive hemorrhage (ruptured heart, aneurysm, or large vessel in lung or stomach, etc.); (2) medullary injury with cessation of heart beat or respiration, (basal hemorrhage, reflex, anaphylaxis;) (3) status lymphaticus; (4) myocardial failure (ventricular fibrillation, myocarditis, angina pectoris (?), coronary thrombosis); (5) pulmonary infarct.

On the other hand, death may be sudden and not instantaneous—the elements of the unexplained and unexpected being uppermost. Such are certain hemorrhage (cerebral, not massive or basal), cardiac infarcts, angina pectoris, myocarditis, etc.

BRIEF CLASSIFICATION OF THE CAUSES OF SUDDEN DEATH.

Cardio-Vascular System:

1. Hemorrhage (heart, aorta, any vessel).
2. Embolism (lung, brain, heart).
3. Thrombosis (heart, brain).
4. Myocarditis.
5. Angina pectoris.
6. Ventricular fibrillation.

Reflex to Vagus:

1. Punctures (spinal, pleural, pericardial, peritoneal).
2. Blow on neck, epigastrfium, hypogastrium.
3. Examination (vagina, urethra, esophagus).
4. Drinking cold water.

Respiratory System:

1. Laryngeal obstruction (edema, polyps, food, stridulus).
2. Tracheal obstruction (food).
3. Mediastinal tumors.
4. Pneumonia and pleurisy.
5. Capillary bronchitis.
6. Cancer.
7. Tuberculosis.
8. Whooping-cough.

Central Nervous System:

1. Rupture of brain abscess.
2. Brain tumor.
3. Meningitis.
4. Epilepsy.
5. Convulsions.
6. Pott's disease.
7. Alcoholic delirium.
8. Spinal puncture.

Uncertain:

1. Cold.
2. Heat.

Unknown:

CARDIO-VASCULAR SYSTEM

Hemorrhage is the great cause of sudden death. *Cerebral hemorrhage* naturally leads. The United States Census report for 1906 gave about nine thousand deaths for it in thirty-three million population. One hundred and seventy-seven deaths from this cause are registered for the city of Richmond in 1919. Of course, all of these are not sudden deaths; and, in general, such statistics are grossly inaccurate. Reviewing five thousand Bellevue autopsies, we found several years ago one hundred and nine cerebral hemorrhages. There was no attempt at finding how many had resulted in sudden death. It is interesting to note that in this series of five thousand autopsies with one hundred and nine cerebral hemorrhages, there occurred only twelve cases of thrombosis of an artery of the brain and but six cerebral emboli, indicating the great preponderating frequency of hemorrhage over both thrombosis and embolism. These facts are further exemplified in the autopsies here reported.

Rupture of an Aneurysm of the aorta, says MacKenzie, is a comparatively rare event.

Pulmonary Hemorrhage occurs in 60 per cent of tuberculous patients. It forms but 2 per cent of the mortality from this disease. Recollection of some 50 or more such hemorrhages impresses one with the infrequency of

a fatal issue. (About 1,000 such deaths occur yearly in England and Wales).

Gastro-Intestinal Hemorrhage.—Martin reported 100 deaths in 100,000 due to gastric ulcer. Twenty per cent of ulcer deaths are due to hemorrhage. This is, then, not a common cause of sudden death. Varices, occult intestinal bleeding, may cause sudden death very rarely.

Embolism.—A recent report from a surgical service of sudden death put pulmonary embolism far above all other causes.

Angina Pectoris.—Eighteen deaths are recorded from this cause as occurring in Richmond in 1919. Osler speaks of seeing sixty cases, chiefly in consultation. It is not a common cause of death. Naturally it is a sudden type. *Ventricular fibrillation* is uniformly a quickly fatal event. It is difficult to say how frequently it decides the issue, as there are no autopsy indications of such a cause.

Spontaneous Rupture of the Heart.—Krumbhaar recently collected 654 cases. It is an accident of old age, generally affects the left ventricle, occurs with coronary disease and usually on the basis of an infarct. "The immediate prosaic causes" are "walking, eating, defecation, slight exertion, or even during sleep."

Myocarditis.—Macht thinks it the most common cause of sudden death. Warthen recently reports eight cases of sudden death from syphilitic myocarditis. He insists that syphilitic myocarditis is a common disease.

Cardiac Infarction (Coronary Thrombosis).—Much of late has been written about this accident. Christian says that in the last ten years he has had in his wards forty-five fatal cases, twenty-nine of which were proven at postmortem. He also had twenty-five to recover from the attack.

Respiratory System

Respiratory Obstruction of the Larynx or Trachea.—Sudden obstruction to the air passages may result in sudden death. Such obstruction may arise from a polypus, or food, or sudden edema, or spasm. A larynx obstructed by a beefsteak is to be seen in the Museum of the College of Physicians and Surgeons in New York City. "Incredible as it may appear, it is not uncommon to find, in the autopsy upon drunken persons who have died with symptoms of choking, such masses so firmly wedged into the glottis as to be removed with difficulty" . . . (McCallum). Sudden death during whooping-cough may result from spasm of the glottis or a ruptured cerebral vessel. Patients with pneumonia and pleurisy die suddenly, but the cause is rarely pulmonary. Acute cardiac failure or more rarely embolism is responsible for the issue. The sudden deaths of capillary bronchitis, tuberculosis, cancer, find their real cause outside of the lungs. Sudden deaths from mediastinal tumors are probably pressure effects upon vital structures and may be initiated by slight changes in size, as, for example, by a hemorrhage into a tumor, which is common enough.

On the whole, then, respiratory sudden deaths, or the asphyxia of Bichat, are extremely rare, and even those which occur in the presence of pulmonary disease usually have extrapulmonary causes at bottom.

Nervous System

Brain Tumor (Neoplasm, Syphilis, Tuberculosis, Cysts).—"Death, which is often very sudden, is usually determined by respiratory failure" . . . (Edward Bramwell). Acute hydrocephalus, edema, or hemorrhage into the tumor initiate sudden pressure changes which disable the vital centers, especially the respiratory.

Rupture of a *brain abscess* may cause sudden death.

Sudden death in *meningitis* is common. Fulminating cases of meningitis may occur without temperature or changes in the spinal fluid, death occurring a few hours after onset.

Five per cent of the deaths in *epilepsy* occur suddenly during the convulsion; and epilepsy, of course, is a very common disease, being estimated as occurring once in every five hundred persons.

Sudden death occurs in *delirium tremens.* This is fairly high when it is recalled that in pneumonia complicating it the mortality is 14 per cent.

Sudden death may occur in the *convulsions* of childhood. Pott's disease, especially with cervical caries may cause a sudden termination by rupture into the cord and pressure in the cervical region.

Anaphylaxis

This is a rare cause of death. Park found in reviewing 350,000 cases treated with diphtheria antitoxin that one in 70,000 died suddenly.

Larson could find but forty-one instances of anaphylactic death in the literature extending back twenty-eight years.

Status Lymphaticus

Symmers, who has had an extensive post-mortem experience, reports 8 per cent of 5,000 Bellevue autopsies showing these stigmata. He discusses sudden death in this condition. He has never seen a thymus large enough to compress the trachea and so cause death. He thinks the minute multiple lymphoid necroses indicate that anaphylaxis is often the cause of death. Not an inconsiderable portion of these cases, however, die from spontaneous rupture of the thin-walled cerebral vessels. He reports seven sudden deaths of this nature, all under thirty years, without the signs of syphilis or arteriosclerosis. Many status deaths might, therefore, be properly classed under vascular accidents.

Paracentesis

Puncture of the various body cavities is fraught with danger. The pleural cavity is the most dangerous, the peritoneal the least. Various reports are to be found in the literature. Lichtenstern collected twenty-three cases, Fox twelve, and Russell three. Capps has written extensively on the subject. There are several explanations (1) pleural reflex to heart and vessels; (2) air embolism; (3) pneumothorax; (4) lung injury with edema and congestion. Death frrom pericardial puncture is due chiefly to injury of the auricle.

Rachicentesis

In 1916, Schonbech compiled seventy-one deaths from lumbar puncture. There are two causes: (1) sudden pressure changes jamming the medulla in the foramen magnum; and (2) reflex cardiac inhibition.

Sudden death, as pointed out under paracentesis and rachicentesis, may be a reflex phenomenon to the vagus. Such an explanation accounts for those rare but unquestionable cases of unexpected death occurring from fright, joy, drinking cold water, during the examination of the vagina, urethra or esophagus, or from a blow on the neck, epigastrium or hypergastrium. Such trivial occurrences as pulling a tooth, opening a boil, or a flea-bite, may cause sudden death.

Heat and Cold

Heatstroke and sunstroke cause sudden death. Exposure to cold may have a similar result, especially in alcoholics.

Many cases of sudden death cannot be explained in the light either of clinical or autopsy findings.

Classification of Thirty-Four Autopsies in Sudden Death

Heart

Myocarditis.—An apparently healthy young soldier was found dead in bed with nothing to explain it. The autopsy showed chiefly a diffuse myocarditis with numerous round cells throughout the muscle. Other findings were a fatty liver and congestion of all the viscera (cf. Warthen's eight cases from syphilitic myocarditis).

Angina Pectoris.—Male, 37, with negative Wassermann, complained of pain under sternum for a few days, sent to bed, got better and went to work. Suddenly taken with violet precordial distress and died. Autopsy showed extensive coronary disease, the posterior coronary artery at its origin being almost completely occluded.

Coronary Infarct.—Male, 58, admitted to hospital with extreme cyanosis, dyspnoea, pain in chest, rapid, irregular pulse. Died in forty minutes. The autopsy showed an extensive infarct of the left ventricle and advanced coronary disease.

Hemorrhage

Cerebral.—(A): With immediate death because of (a) size of hemorrhage (b) basal location.

1. Male, 50, suddenly falls dead without previous history. The autopsy showed extensive basal hemorrhage. There was also a grape size aneumrysm of the middle cerebral artery.

2. Male, sudden death. No history. The autopsy showed massive subdural hemorrhage.

3. Male, 53, fell dead at work (Berlin). The autopsy showed extensive hemorrhage into the pons and into the third and fourth ventricles. There was also syphilitic aortitis.

4. Female, 52, no history (Berlin). The autopsy showed massive hemorrhage into pons, medulla, and mid-brain; also aneurysm of aorta and arteriosclerosis.

5. Female, 32. After suffering for some time with headache, speech defect, and optic edema, she was taken to hospital and operated upon for sinusitis. Few hours later, became suddenly unconscious and died. Autopsy showed

large tumor on left side under the corpus callosum. Hemorrhage had occurred in the tumor, rupturing into left lateral ventricle.

Cerebral—(B): Slower, due to smaller hemorrhage in less vital location; death in a few hours or days.

1. Male, 70 (?) had sudden dizziness on lifting heavy weight. Unconsciousness in one hour. Death in twelve hours. Autopsy showed hemorrhage into left optic thalmus and lateral ventricle. Arteriosclerosis. Hemorrhagic cystitis. Coronary disease.

2. Male, 35, found dead in bed. Autopsy showed large hemorrhage into right centrum ovale and the basal nuclei. Edema of scalp indicated some hours of life after hemorrhage.

3. Male, 22, fell unconscious while at telephone. Died in twenty-eight hours, after a short lucid interval and several convulsions. Autopsy showed hemorrhage into right lateral ventricle. Softening in Island of Reil.

4. Female, 35, became suddenly unconscious. Died in coma after six days. Autopsy showed hemorrhage into fourth ventricle and left crux cerebri (small).

5. Woman, 35. Husband has syphilis (Berlin). Autopsy showed hemorrhage into right cerebral hemispheres.

Other Blood Vessels

Large with Immediate Death.—Rupture of the Aorta.—An apparently well negro soldier suddenly fell in his tracks, coughed up an enormous amount of blood and died. The autopsy showed syphilitic aortitis and an aneurysm of the aorta which had ruptured into the left primary bronchus.

Rupture of Pulmonary Artery.—Male, 50, entered hospital for loss of weight and pain in chest. Diagnosis of cancer of the stomach and esophagus made. Died two weeks later very suddenly. The autopsy showed the stomach full of blood and a large cauliflower growth on the stomach wall which had eroded the right pulmonary vessels.

Small with Slower Death.—Ruptured Ectopic.—Female, 35, found dead in bed. Autopsy showed the abdomen full of blood and a ruptured ectopic pregnancy (about 3½ months).

Ruptured Esophageal Varix.—Male, 32, with enlarged spleen and history of syphilis, suddenly vomited blood and died in twelve hours. At autopsy there was a syphilitic liver, enormous spleen and ruptured esophageal varices with blood in the stomach.

Occult Intestinal Hemorrhage.—Male, 23, history of dark stools, fainting and death. At autopsy, with the exception of the stomach and duodenum, the whole intestinal canal was full of blood (900 c.c.). Prolonged search failed to show any break in the mucous membrane.

Abdominal Hemorrhage.—Two hours following the tapping of a case of ascites the patient was found in collapse. Death occurred almost immediately. A tap of the abdomen after death showed that the contents were now blood.

Pulmonary Embolism

1. A young soldier recovering from pleurisy died suddenly. At autopsy both pulmonary arteries were found plugged by a clot. There was an organizing pleurisy over the right lower lobe.

2. Female, 31, no history. The autopsy showed perforated appendix (operated). Femoral phlebitis and embolus in the right pulmonary artery.

3. Sudden death occurred in another case in the course of recovering from appendicitis. At autopsy embolus in pulmonary artery.

4. Sudden death occurred in still another patient recovering from appendicitis. Autopsy showed embolus in pulmonary artery.

Status Lymphaticus

1. A ten months' old boy was being seen daily with a moderate case of whooping-cough. A few hours after last visit, he suddenly died. The autopsy showed well-marked signs of status lymphaticus and no other cause for death. The thymus weighed 25 gms.

2. Female, 26, pupil nurse at Presbyterian Hospital, New York City, while eating breakfast, suddenly fell back dead. Autopsy revealed a typical status lymphaticus. Thymus weighed 35 gms.

3. Male, 30, died suddenly after taking a dose of salts. A friend had taken same dose without harm. The autopsy showed a well-developed status lymphaticus with an echinococcus cyst of the liver.

4. A two months' old boy at autopsy (Berlin) showed small hemorrhage in thymus, heart, pleura. Thymus 25 gms.

5. Female, 23, in good health, in a contention with a man at 3 A. M., became violently angry and dropped dead. The autopsy showed

a well-marked status with a small aneurysm of the cerebral vessels which had ruptured. Hemorrhage was in ventricles and at the base, compressing the medulla. This should also be classified under cerebral hemorrhage.

On Operating Table

Male, 35, suddenly died while a perforated gastric ulcer was being sutured. At autopsy no other cause of death was disclosed.

Formalin

Male, 35, drank four drams of formalin by mistake. Immediately had a severe pain in the stomach and died. The autopsy showed the stomach swollen, pink, and fixed.

Heat Stroke

Male, 48, large, fell suddenly dead, with a diagnosis of heat stroke. The autopsy showed edema of the brain.

Alcoholism

1. Woman, 40, found dead. Autopsy showed fatty liver.

2. Woman, 35, found dead in park. Autopsy showed extremely fatty liver.

Summary.

			Number	Per cent
Heart			3	9.9
Myocarditis	(1)			
Angina pectoris	(1)			
Coronary infarct	(1)			
Hemorrhage			17	48.5
Cerebral		11		
Immediate (base)		6		
Slow		5		
Other		6		18
Immediate—aorta	(1)	2		
Pulmonary artery	(1)			
Slow—ectopic	(1)			
varix	(1)	4		
occult intestinal	(1)			
abdominal injury	(1)			
Pulmonary Infarct			4	12
Status Lymphaticus			5	18
Children	(2)			
Adults	(3)			
Operating Table			1	3.3
Formalin			1	3.3
Heat Stroke			1	3.3
Alcohol (2)			2	6.6
			34	

Sudden Death by Age.

	Number			Per cent
Baby	2			5.9
10-20	0			.0
20-30	9	)	26.5	)
		) 22		) 64.
30-40	13	)	38.2	)
40-50	4	)	11.8	)
		) 9		) 26.4
50-60	5	)	14.7	)
60-70	1			2.9
				100.7

Autopsy Experience in Interpreting Clinical Death

Sudden death is a common occurrence. Sudden death followed by an autopsy is not common. How is the average doctor to know the cause of death without an autopsy? The history is extremely valuable, but without a knowledge of the post-mortem findings in a large series of sudden death, this will rarely satisfy the honest mind. One often wonders what per cent of death certificates of sudden death are correct.

To show the difficulty, a man about 70, with arteriosclerosis and chronic nephritis, began to get very tired and weak at his work. Blood pressure was 130/80. He was put to bed and improved. After about a week, his wife heard a heavy fall, rushed into his room and found him dead. No autopsy. We could not conscientiously sign a death certificate. The coroner without autopsy glibly wrote—cause of death —"organic heart disease." What did he mean? Rupture of the heart, angina pectoris, coronary infarct, ventricular fibrillation? There was no evidence for any. On the basis of statistics, the probabilities are that he had a cerebral hemorrhage, massive and basic, putting his respiratory or cardiac center out of commission. In favor of this are his age, arteriosclerosis and the fact that 33 per cent of our 34 cases died of this cause.

A woman, 38, had headache, nausea, vomiting and blindness, with blood pressure 210/140, albuminuric retinitis, albumen and casts in urine, blood urea 40 mgm. per 100 c.c. phthalein 50 in two hours. After several weeks' observation in the hospital, she suddenly, while in bed, became unconscious, breathed stertorously, and died in a few minutes. No autopsy. The Board of Health was satisfied with a diagnosis of chronic neiphritis, but who knows the cause of death?

MERCURIAL POISONING FROM LOCAL APPLICATIONS OF MERCURIAL OINTMENT.—REPORT OF CASE.

By CHARLES H. LUPTON, M. D., Norfolk, Va.

E. M., female, white, married, aged twenty-four, suffering from what she thought to be several patches of ring-worm of the body, was advised by her brother, a druggist, to use mercurial ointment. On March 27, 1925, she secured three ounces of mercurial ointment and

applied the entire amount to her body, followed several hours later by a hot bath. On March 28th, she painted the patches with tincture of iodine. On March 29th, she secured an additional two ounces of mercurial ointment and applied the entire amount to her body as she had done on the previous occasion.

I was first called to see her on March 30, 1925. At that time she was suffering from considerable pain of the face and mouth; the whole face was swollen, but most markedly on the left side. There was some swelling of the buccal mucous membrane, and there was tenderness around the teeth. On March 31st, she had developed a mild stomatitis, and late in the afternoon she developed colicky pains in the abdomen, tenesmus and melena, with a temperature of 99.2. The urine showed a trace of albumin and many red blood cells to the field. Although there was pain in the kidney regions, the output of urine remained within normal limits. The urine continued to show a trace of albumin with some red blood cells for a number of days, but it was entirely normal on April 7, 1925. The swelling of the face and intestinal symptoms had disappeared by April 3, 1925.

Sodium thiosulphate was given when the patient was first seen and continued until symptoms disappeared.

This case is reported because it is rare, also with the hope it may impress upon anyone who orders drugs without specific instructions as to the seriousness of their acts, and so that we may realize the ever present menace of prescribing by druggists.

THE NASAL ACCESSORY SINUSES.*

By G. M. MAXWELL, M. D., Roanoke, Va.

Let other poets idly sing
Their songs of love; to you I bring
A song of something that's worth while;
And though at times mayhap you'll smile
And shake your head, and maybe laugh
And say, "That's rot, or only chaff;
Yet if you'll follow me on through
I'll try to bring something to you
To make you stop and think a bit
As to the truthfulness of it.
I'll take you rambling in and out
Among the caverns of your snout
Or nose, or whatsoe'er you call
That part of you which first of all
Comes in a room when you come in
Is flattened out whene'er you grin,
Is often into trouble thrust,
Sifts daily pounds and pounds of dust,
Stands sentinel unto your lung,
Yet seldom has its praises sung.
We sing the praises of Luray,
And thousands coming every day
Go walking through them, in and out,
And from the hills their praises shout;
But very little mankind knows
About the caverns of the nose,
More wonderful in every way
Than any caverns of Luray.
They do a very wondrous part
In guarding both the lungs and heart
Against the inroads of the bugs
Which constantly invade our mugs,
And make a constant fight to gain
The mastery, and cause us pain.
From out their depths there daily flows
Five pints of fluid to the nose
To keep it moist and clean and fit
To fight the germs that tackle it.
'Tis little wonder, then, that they,
Thus working on from day to day
And never resting in the night,
Become diseased and lose the fight
Against the enemies of man,
Though they may strive the best they can;
They too get sick along with you,
And then they need a doctor too.

When any one, or young or old
Is taken with a sudden cold,
Such as we term acute rhinitis,
He has in truth a sinusitis;
And if we only had a way
To open up the passageway
Into the sinus and wash out
The germs in there, we'd put to rout
The cold at once, and we may say
We'd cure a cold in one short day.
But here is where the trouble lies,
These sinuses surround the eyes,
Lie very close about the brain,
And as we there an entrance gain
We're apt to slip a probe on through
And have a little scare or two;
Or maybe something even worse—
An undertaker with his hearse.
And so it well behooves a man
To study out the best he can
Just where the normal ostium is;
In fact, to make it his own "biz"
To know the caverns in and out;
In fine, to know what he's about
Before he ventures to explore
These sinuses through wall or floor.
In one man, they may be quite small
Another, almost none at all;
And so we must use every care
To be sure we've a sinus there.
If it is there, then it remains
To see if it some pus contains;
If pus, what kind—if foul, or sweet,
And so at every turn we meet
Some further puzzle to unravel
As through the sinuses we travel.
We transillumine, use X-ray
And search around in every way
To see which sinus is involved,
Yet never get the puzzle solved.

I had a patient with an antrum
That sometimes threw him in a tantrum,
And then again he'd go entirely blind:

*Read before the Southwestern Virginia Medical Society, at Roanoke, Va., March 31, 1926.

I tried all kinds of doping
Without entirely coping
With the trouble, 'till I thought I'd lose my mind,
When the thought was brought to me
In a paper by Dupuy,
That the antrum in itself was not at fault,
But simply by location
Was full of suppuration
From other sinuses up in the vault.
I stirred up quite a muss
In hunting for the pus
That was filling up the antrum day by day,
The work of some vile bug
Somewhere within the mug,
Thus hoping I might drive the pest away.
I cleared the ethmoids out,
Put the turbinates to rout,
Rasped the frontal and the sphenoid, 'till the nose,
Bereft of all its tissues
And with a lot of fissures,
Was open as a piece of rubber hose.
The pus kept rolling on
'Till hope was almost gone—
The patient and myself in deep despair—
When there flashed on me the truth
That the fault was in a tooth,
So I had it pulled, and found the trouble there.
The lesson in this, then,
Of use to all you men,
Is, don't jump hastily to a conclusion,
But study every case,
Nor hurry in the race,
And make your diagnosis by exclusion.
A moral lies here too,
Of use to all of you,
That men, like sinuses, are blamed a heap
For the things their neighbors do,
And so it's up to you
To be careful of the company you keep.

Your diagnosis made,
By calling to your aid
The X-ray, dentist, lights and symptoms, all;
You're only half way done,
Your trouble's just begun;
Beware, then, or your feathers yet will fall.
An antrum don't get well
At once; and if you tell
The patient that it will, you will regret
The promise which you made,
For moons will come and fade
Before a real good result you get.
Sometimes one irrigation
Will help it, like the nation,
And sometimes three or four will bring a cure,
But antrums once infected
Should never be neglected,
And of a final cure you're never sure.

The operative measures
Once held by us as treasures
And thought to cure an antrum right up short,
Have fallen in disuse
Through very much abuse—
Are only used today as last resort.
The irrigation plan
Appeals to every man;
The patient and the doctor like it best—
It's almost free from pain
And if results it gain,
Why should it not now supersede the rest.

Of course, if one's annoyed
With pus in the ethmoid,
We can't go in; but if the nose is packed
With silvol every day,
Much mucus comes away
And brings the pus out through the normal tract.
If the sphenoid is involved
The puzzle's not yet solved,
And we may have to operate at last.
But even if it's there
We ought to use due care
And treat it 'till the acute stage is past.
The modern flurry, noise and fuss
Of hunting everywhere for pus
At root of tooth, in ethmoid bone
And everywhere, is surely prone
To make one crazy over bugs
And to forget about the drugs
His forbears used in form of pills
To cure a hundred thousand ills.
So, then, of therapeutic measures
We have some tried and trusted treasures,
There's nothing like some calomel,
When one has lost his sense of smell
From ethmoiditis, or a cold,
It then is worth its weight in gold;
And nothing with it can compete
If you the tissues would deplete.
The coal tar preparations too
Are still used by a few of you,
And each one has some virtue still
Although by some they're counted nil.

The surgeon who now sets aside
These drugs that one time were the pride
Of those old therapists of old,
Who won with them battles untold
Against disease of every kind,
In bone and muscle, heart and mind,
Will some day 'wake to find that he
Has lost his opportunity
Of building for himself a name
To be carved in the hall of fame.

The serums, too, are of some use,
Though they have suffered much abuse
By some who, without rhyme or reason,
Have knocked them in and out of season,
And really haven't tried to see
If in them any virtue be.
This much I'll say with firm conviction
Without much fear of contradiction,
Whate'er be said of them in jest,
They stand the scientific test,
And he who'lines himself with science,
Will never make a bad alliance.

The problem facing all of us
Is, how to rid ourselves from pus;
That gets a hold and grows and grows
And causes almost all our woes;
And he who tries one single plan
Will ne'er succeed. He never can.
But he who carves and stimulates,
Depletes, and then evacuates,
And immunizes as he goes,
May overcome this worst of foes.

Shenandoah Life Building.

PLACE—Norfolk, Virginia.

DATES—October 12, 13, 14 and 15.

OBJECT—Fifty-seventh annual meeting of Medical Society of Virginia.

BE SURE TO ATTEND.

XUM

Miscellaneous

Dr. Henry R. Carter, U. S. P. H. S., 1852-1925.

On August 10, 1926, Hanover County, Virginia, honored twelve of its most famous sons. On this occasion, in the midst of a large gathering, portraits of these men were unveiled in the county court house, appropriate ceremonies being held. One of these portraits was that of Dr. Henry R. Carter, to whom the world owes an incalculable debt of gratitude. Without his preliminary work, the conquest of yellow fever would have been delayed, no one can say how long. The following brief sketch is an autobiography prepared by Dr. Carter in response to an official request for the files of the United States Public Health Service. It is an unemotional narrative of a great life, and undobtedly will be of interest to the medical profession of Virginia, his native State.—(*Editor*).

Henry R. Carter was born in Virginia in 1852 and lived on his father's plantation until he went to college. This was the University of Virginia, where he pursued a scientific course—paying special attention to mathematics—and graduated in 1869 in engineering.

Owing to a broken leg, the prognosis regardgarding which was permanent disability, he did not continue in this profession, but began the study of medicine—teaching for three years, one as Assistant in Applied Mathematics in the University of Virginia, before going to medical school. He graduated in medicine at the University of Maryland and also served one year as interne in the University Hospital, Baltimore, leaving it 1879.

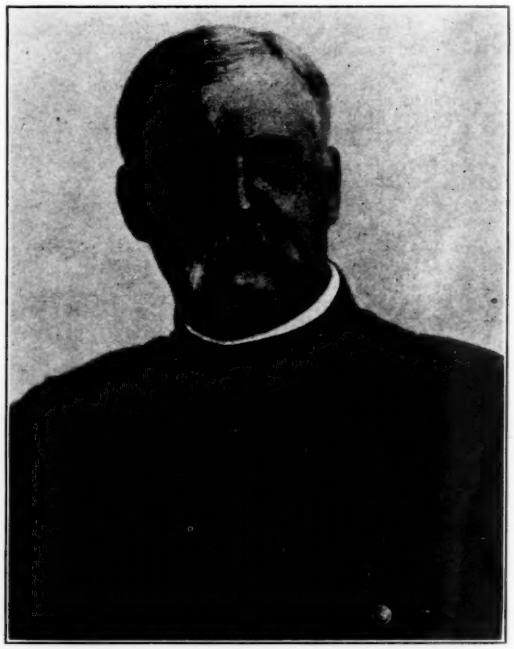
He entered the Marine Hospital Service May 5, 1879.

The first detail was Boston. In July he was ordered to Cairo, Ill., and in the fall saw his first yellow fever. After Cairo he served in Memphis, New Orleans and San Francisco doing, except a little epidemic work while in Memphis, the ordinary work of an officer at hospital stations of the first and second class.

In January 1888 he was ordered to Ship Island, the quarantine station of the Gulf, to relieve Surgeon Robt. Murray, with whom he had previously served in Memphis. This really was the beginning of his service.

Ship Island was the refuge station to which came all vessels infected, or probably infected, with yellow fever bound for any Gulf Port, except New Orleans—which handled her own infected vessels. It handled many and a bad class of vessels—sailing ships from Rio, Santos, Havana and Colon which, at that time, were especially dangerous.

The conditions of work at this station were especially difficult. There was no certainty about it. There were no regulations for the conduct of the station and when one began to formulate them he was confronted with the absence of reliable data on which to found them. It is true that there were quarantine procedures in operation at all tributary ports from Apalachicola to Galveston, but they



Dr. Henry R. Carter, U. S. P. H. S., 1852-1925.

were all different. In disinfection, for instance—New Orleans laid most stress on steam disinfection of clothes and wetting the ballast with bi-chloride solution; Pensacola, with apparently very little faith in any disinfection, on the discharge of ballast and white washing the hold. Fortunately all used sulphur fumigation.

The periods of detention in quarantine were also different for each port of entry, and for New Orleans different for different ports of clearance. It varied in the Gulf Ports from 3 to 21 days or until after frost. Nor, although all required detention and certain processes

called disinfection, was there any relation between the detention of the personnel aboard and the disinfection of the vessel. The detention dated — days "from date of leaving last infected port" or "from date of arrival in quarantine" or "from date of inspection by quarantine officer," etc. In no case was any relation predicated between the date of disinfection of the vessel and the detention of the personnel. It was a problem then to determine what was efficient, justifiable quarantine.

Moreover, the work of this station was valueless unless its pratique was accepted at the port of entry of the vessel bearing it, and in the past that had been far from universal.

It was necessary, then (1) to find out what was necessary to make an efficient and reasonable quarantine, especially what was the minimum period of safe detention, for detention is to a vessel the expensive part of quarantine.

2. To get the confidence of the Boards of Health of the Gulf Ports in the work of the station so that its pratique might always be taken. For this last it was at times necessary—especially at first—to do things in treating a vessel judged unnecessary by the subject of this sketch.

3. To induce the Boards of Health to waive the plainly unnecessary requirements both of treatment and detention of vessels, in other words, as far as possible to render uniform the quarantine requirements of the Gulf Ports.

4. To conduct the station with minimum expense to vessels so that they would come to Ship Island by preference, when preference was allowed. This was to increase the usefulness of the station by increasing its clientele.

From such data as he had Carter tentatively deduced—wrongly indeed—that five days fully covered the maximum period of incubation of yellow fever and made it his period of detention. He counted this period, however, from "the completion of disinfection of a vessel; the last exposure of her personnel to infection."

He had also been convinced, at the end of the third year, that sulphur fumigation by pots was efficient by itself to destroy infection of yellow fever aboard ships, although this method of treatment was looked upon as unreliable by the scientific sanitarians of the time.

He had, then, regulations consistent and founded on the best data obtainable, under which, although some unnecessary measures were taken, a safe quarantine was conducted.

Carter remained at this station four and a half years, by the end of which time the above desiderata (especially the 2nd, 3rd and 4th) had been measurably carried out. Incidentally this was, I think, the beginning of the maritime quarantine of the Service. The station had previously no principle of growth in it. White, at Sapelo, was doing much the same work for the South Atlantic ports. These stations—Sapelo and Chandeleur—were in constant correspondence.

Here Groenvelt—a most promising young officer—died of yellow fever, sickening after a few days' service. Why Carter did not contract it, it is hard to say. Only three others not immune to yellow fever were employed at the station during these four and a half years and they all contracted it.

The radical innovation in the Ship Island regulations of '88 was not in prescribing any special method of disinfection or in fixing on a special period of detention for personnel, but in counting that period from the completion of disinfection of the vessel. At this time the regulations of all United States ports which quarantined against yellow fever—I think of all United States ports—dated this period of detention from "the date of leaving the last infected port" or "the date of arrival in quarantine," etc. In no case was any relation predicated between the date of disinfection of the vessel and the time of detention. How so obvious a principle—the very pivot of a quarantine of disinfection and observation of personnel—could have been missed it is not easy to see, but missed it was. Not only the regulations of the United States ports were as quoted, but the same was true of the regulation of such British ports in America as quarantined against yellow fever. Not until after the United States regulations became mandatory was this principle universally applied in this country.

In order to determine the period of detention of personnel it was necessary to know the period of incubation of yellow fever. For this there was no satisfactory data in existence—he had access to a good special library. He set himself, then, to determine it; taking this, if necessary, as his life's work—it being, at that time, a very important problem in maritime quarantine. This work was not completed until 1901—twelve years afterwards.

While working on this, another very puzzling phenomenon presented itself. Just as there was a period of incubation in the man

XUM

which must be passed before the infection became manifest, so there seemed to be a period of time through which the ship must pass before its infection became manifest—in the only way it is ever manifest—by being able to convey yellow fever to man. In other words, "after a ship becomes infected a considerable period of time must elapse before it becomes infective"—11 to 18 days was the first tentative determination.

We know well what this means now, but it introduced a very troublesome factor in his attempt to discover the period of incubation in man. Indeed, it was a long time before Carter was able to formulate the above as an explanation of his observations and then it was rather by intuition. It was an allowable, but not a necessary, deduction from his observation. As the observations accumulated he became convinced absolutely, but others equally well able to judge were not convinced. Not until he had the data from the country-epidemics of Orwood and Taylor in 1898 did he feel that he had convincing proof—evidence convincing to other people. He used this principle, however, in the suppression of some epidemics, especially at McHenry in 1898 and elsewhere, and to a knowledge of it the suppression of that epidemic was due.

From the Gulf quarantine, after a short service at Cape Charles and Sapelo quarantines and at Cincinnati, Carter was ordered in the summer of 1892 to Cape Charles quarantine, which was to be prepared to provide against cholera, then prevalent in Hamburg. He fitted up the station and moored the U. S. S. Jamestown, which, I believe, is still in commission there. He remained in charge of the station until cold weather, handling a number of passenger steamers from cholera infected ports.

The next service to be noted was in the Brunswick epidemic in 1893. Carter went down from Washington, June 15th, to investigate, and remained to clean up after a case of yellow fever that had been reported on the Satilla River, south of Brunswick. On his, Carter's report of conditions at the Quarantine Station and recommendations, it was surrendered to the United States, under the Act of February 15, 1893; the first station to be thus surrendered. The influence of this action was a decided factor in similar action in regard to the stations of Fernandina, Savannah, Charleston and Pascagoola, and, I presume, for the Act of 1906.

In this epidemic Branham died of yellow fever—a fine officer; of a great force and high character. The sacrifice of his life was abundantly paid for by saving this section of the South from a much wider spread epidemic than occurred. He had been on the station about seven days when he contracted the fever.

Following the Brunswick epidemic the winter was spent at the bureau and in installing the Brunswick Station. In the spring he was ordered to the Dry Tortugas—the pleasantest quarantine station in the South; although somewhat isolated.

In consequence of the destruction of Chandeleur—the quarantine of the Gulf—October 2, 1893—Tortugas was to be used as the refuge station for Gulf ports until another station could be installed at Ship Island. There was, thus considerable work here and, on account of the proximity of Havana, which was then badly infected, a considerable number of vessels with yellow fever. Indeed, this station treated this year more than twice as many cases of yellow fever as all the other stations in the United States combined.

In 1890, Carter had proposed the disinfection of vessels from Cuban and Mexican ports at the port of departure or en route, so that the time en route to the port of entry after such disinfection could count as observation of personnel and by so much lesson the time of the detention of the ship in quarantine. He had especially advocated the use of Tortugas for vessels from Havana coming into the Gulf. He was now able—much to his gratification—to put this plan into practice. How this method has been developed there is no need to tell. It is the key to our maritime sanitation.

Waiving two summers spent inspecting the Southern quarantines and looking after refugees from the North Coast of Cuba, the next two and a half years were spent ashore on hospital duty.

When, in the summer of 1897, yellow fever was reported at Ocean Springs, Carter was ordered from Chicago to that point and, reporting to Surgeon Murray, was engaged in sanitary work in that neighborhood until fever was declared in New Orleans. He was then put in charge of the Service work in Louisiana and Mississippi—except the Mississippi Coast. This was to arrange for transportation from and through the fever infected districts and

to assist the health authorities in preventing the further spread of the fever. The work was mainly pioneer work and the whole district and surrounding country was in a very unsettled and unsatisfactory state. Yet, on the whole, the work was smooth and successful. He counts it, however, the most onerous of all his details. In this epidemic Carter, himself, contracted yellow fever, but it was late—November 18th; the epidemic was over; quarantine was raised, and no special inconvenience was caused by his illness.

When the post-epidemic work was over, there being reason from the mildness of the winter to fear a recrudesence of the fever, Carter was ordered to the New Orleans hospital so as to be on hand if needed. The winter and spring were consumed at various conferences trying to arrange for uniformity of method in handling epidemics; train inspection, passenger traffic, etc.

Early in June yellow fever was discovered at McHenry—a small town in Southern Mississippi. Carter represented the Service in assisting the Mississippi Board in (1) Confining it to McHenry, (2) Eliminating it from that town. The measures taken were of the most vigorous character and he was given a very free hand both by the Department and his Mississippi coadjutors, for with yellow fever fairly epidemic in an inland town so early in the season the danger of a widespread epidemic was considered extreme. These measures were successful and the fever was eliminated from McHenry.

This was, I think, the first epidemic of yellow fever to be suppressed in the South in the summer time.

Later in the summer Carter was under orders for Santiago de Cuba when yellow fever was reported at Franklin, La., then in Taylor, Orwood, and Jackson, Miss., and finally in New Orleans. His orders were cancelled, and he took charge of these outbreaks as they occurred and finally of the infected district as a whole, so far as United States work was concerned.

In this epidemic, although it was widespread, the work was far easier than in 1897, because there was a feeling of confidence in Service measures and a reasonable uniformity of requirements of the Health Authorities.

In January, 1899, he went to Cuba as Chief Quarantine Officer of the island, in charge of all maritime sanitation of Cuban ports for both incoming and outgoing vessels, except those of the Province of Santiago de Cuba.

At Havana he was able, with a good fumigating plant, to put in operation on a large scale, the plan of disinfection at the port of departure and counting the time in transit as observation of personnel so as to have short, or no, detention at the United States port of entry for her personnel.

He also served on the Board for the Diagnosis of Yellow Fever; Carlos Finley, Gorgas and, later, Juan Guiterras, being also members—men with whom it was both a pleasure and an honor to be associated.

This position was held about eighteen months, although Carter spent the fall in the United States engaged with epidemics at Key West, New Orleans and Jackson, Miss. In the Key West epidemic died Assistant Surgeon McAdams—a young man of the highest promise. He did most excellent work in the short time before he was taken ill.

During the winter he wrote, from his Taylor and Orwood notes, the brochure "The Interval Between Infecting and Secondary Cases of Yellow Fever;" which Reed (and Lazear) said led him to believe that yellow fever was conveyed by a host and thus led to his experiments which proved it true. The brochure "Extrinsic Incubation of Yellow Fever" was written some months later.

Leaving Cuba in 1900 on account of ill health—Memiere's Disease—the disability from which was considerable, Carter was in charge of hospitals in the United States until May, 1904, when he was assigned as Chief Quarantine Officer to the Isthmian Canal Commission.

He served in Panama, first in that capacity organizing the quarantine service and later, from December 23, 1904, as Director of Hospitals—the second position in the Sanitary Department to that of Dr. Gorgas, and in charge of all organization for "Public Assistance." He remained with the Commission for over five years and was concerned with much of the organization and early work on the Isthmus.

While on this detail Major Ronald Ross—himself a recipient of the Prize—presented his name conjointly with that of Finley for the Nobel Prize on the ground that the work done on the "Extrinsic Incubation of Yellow Fever" was the foundation on which Reed's rested and gave him the clue which led him to make the

XUM

direct experiments which produced such brilliant results. Mr. Roosevelt received the Nobel Prize that year for America.

Since returning to duty with his own Service Carter has had no detail worthy of note, except, possibly, an inspection of the Immigration work from Havre to Libau in connection with the regulations of February 15, 1893. In 1910 the University of Maryland conferred on him the degree of LL. D.

Last fall he was ordered to Honolulu for sanitary work, but before he could go, he was taken sick with what was diagnosed as typhoid fever. This was really syphilitic fever from an infection contracted in 1892 during a surgical operation. The diagnosis was not made until the fifty-sixth day of the fever and he has not yet recovered entirely from the effects of this long illness.

He has been a delicate man all his life and frequently sick, yet his disabilities have come conveniently so as not to interfere with his work and this is the only time that one has prevented him from carrying out an order.

This sketch exemplifies how a man who was very fond of the practice of medicine and whose only ambition was to make himself a good internist was led, by force of circumstances, to devote his life to sanitation.

Sanitary work at first was very distasteful to him and the life it involved especially onerous, yet he saw the importance of it and he clearly saw that only as a sanitary service could his Service expand—and that the possibilities of expansion as such were great. Although he did not, at first, look farther than its administration of a National Maritime Quarantine System. Not only at his own station did he strive to develop this work, but he pressed the matter on the attention of others who might help—commercial bodies; ship owners; certain boards of health, etc., as well as on that of other officers of the Service and the Surgeon-General—on the latter probably at times out of season. As the sanitary work of the Service increased, having had some experince, he was sent on a number of such details—which were little sought after—with the result that he gradually drifted into the sanitary division of the Service—at that time almost exclusively maritime and tropical. This of course, was proper as with increase of experience he became more suitable for such work.

His life has been less happy than if he had remained a hospital man, yet it has been a much more satisfactory life. He believes that he has been of more service to the world and to his Service than if he had continued as a practitioner of medicine. Looking back on his life these are some of the things which give him most satisfaction:

1. The institution of a rational relation between the disinfection of vessel and the disinfection of her personnel.

2. The measure of uniformity he was able to introduce in the quarantine requirements of Southern ports. This led them to accept more readily the United States requirements of 1893.

3. His part in the disinfection of vessels at the infected port of departure, or en route, so that the time en route would count as time in quarantine.

4. The surrender of the Brunswick Quarantine Station to the Service—as being the first quarantine so surrendered and a factor inducing similar action by other local quarantine authorities.

5. His executive work in yellow fever epidemics—the crown of which was the suppression of the McHenry epidemic in 1898.

6. The determination of the "Period of Extrinsic Incubation of Yellow Fever." This was the determining factor leading to Reed's demonstration of its conveyance by mosquitoes. This is by far the most valuable piece of work with which he can be credited.

It is also a great gratification to him to have borne part in the work on the Panama Canal. Of the work of its Sanitary Department he may say with the Greek historian: "All of which I saw and part of which I was." It was work well worth a man's doing.

Correspondence

The Danger of Using Other Than the State Solution of Nitrate of Silver in Infants' Eyes.

August 25, 1926.

To Virginia Doctors:

The Virginia Bureau of Vital Statistics, which is intrusted with the free distribution of a 1 per cent solution of Nitrate of Silver in wax ampules, for use in the eyes of the newly born, had attention called recently to the danger of using other preparations.

A physician came into the office for a supply of ampules, and reported a case of severe conjunctivitis with corneal ulcer following the use of a druggist's solution. He consented to send

the remainder of the solution to the office of the Bureau. This was submitted to the State Chemist for analysis, who reports that it is a 10 per cent solution of Nitrate of Silver, and that the accuracy of the finding was verified by three different men.

In another case, the physician used a hospital solution, and had a severe case of opthalmia neonatorum on his hands, with a resulting suit for damage. He was not able to secure for us a sample of this solution for analysis.

These cases are cited as warnings to the profession to take no chances, but to play safe and use only the solution for which the State is responsible. A company which insures physicians against malpractice suits and undertakes the defense in these cases, advises us that they will not consider themselves liable when the suit, as in these cases, is due to failure to comply with the State law, which calls for the use of the solution "prescribed or furnished by the State Board of Health."

Cases of ophthalmia neonatorum are to be reported by midwives to a member of the local Board of Health or to other physician, who will institute prompt treatment. They should also be reported to the State Board of Health through the Bureau of Vital Statistics.

Complete reports are probably not available, but only about half a dozen cases of ophthalmia neonatorum have been heard of since the passage of this law in 1918. The fact should not be lost sight of that by tests made in one of the large cities only about 40 per cent of cases of ophthalmia neonatorum were found to be of gonorrheal origin, the rest being due to pneumococcus, streptococcus, diplobacillus, colon bacillus, and staphylococcus. It is therefore never safe to presume that because gonorrhea is absent, there is no need for the prophylactic.

W. A. Plecker, M. D.,
State Registrar of Vital Statistics.

Methods of Vaccination.

To the Editor: September 2, 1926.

Now that schools are opening, many children will have to be vaccinated against smallpox. We strongly recommend to the readers of the Monthly the new methods, a description of which follows. The great advantages are that there is far less chance of infection and an equal, or better, chance of a "take."

1. Cleanse skin in vicinity of the insertion of the deltoid muscle with soap and water and alcohol, or ether, then allow to dry.

2. Drop of virus is placed on cleansed site.

3. A sterile needle held almost parallel with skin is gently pushed through the vaccine into top layer of the skin for about one-eighth of an inch. This is repeated twice. The skin is not pierced, no blood is drawn, there is no pain. (Canadian Method).

or (3). The arm is held horizontal with the skin made taut by the left hand, and a sterile needle is held in the right hand with the forefinger and middle finger above the needle, the thumb below the needle pointing to the operator's left. The side of the needle is then rapidly but firmly pressed into the drop about 20 times, the needle being raised clear of the skin after each pressure. The needle should be held parallel with the skin and the motion should be perpendicular to the skin. The skin is not pierced, no blood is drawn, there is no pain. (U. S. Public Health Service).

4. Wipe remaining virus off with sterile gauze and do *not* cover with a dressing.

Ennion G. Williams,
State Health Commissioner.

The County Society

Delegates for State Meeting.

With a view to arousing and maintaining interest in the COUNTY SOCIETY, it is requested that, as far as possible, every county in the State should have a county society.

Any county with three or more eligible physicians may organize and apply for a charter from the State Society, thus securing the privilege of representation in the House of Delegates of the State Society at its annual meetings.

Only one component society shall be organized in any county.

County societies which have been inactive should re-organize. Upon request, your Councilor, the President or Secretary of the State Society will help in any way possible.

Inquiries addressed to the MEDICAL SOCIETY OF VIRGINIA, 104½ West Grace Street, Richmond, will have prompt attention.

Do you know that fellowship in the American Medical Association, the largest association of its kind in the world, is dependent upon membership in your State Society, and that membership in your State Society is dependent upon membership in your County Society?

Each County Society shall have general jurisdiction over the medical matters in the County.

Dues in the State Society are five dollars a year, the fiscal year beginning January 1. Without other charge, members receive the "Virginia Medical Monthly," official organ of the Society, and legal defense if sued for alleged civil malpractice.

With the annual meeting of the Medical Society so close at hand, each component society in the State should feel an urgent need to have a meeting this month, that they might appoint their delegates and alternates, and thus secure the representation to which they are entitled in the House of Delegates of the State Society.

This year, there is to be considered a revision in the Constitution and By-Laws of the Society. Now, if ever, each component society should be represented so as to have "its say." Get out your August MONTHLY and see if you are in accord with the Constitution and By-Laws proposed by the Committee which had this matter in charge. If not, your delegate may be empowered to express your views in the House of Delegates at the annual meeting in Norfolk.

Several county societies have reorganized this year. Don't be a laggard! Fall in line and let's have a society of which we may all be justly proud—

"It ain't the individual
Or the army as a whole,
But the everlasting teamwork
Of every bloomin' soul."

Womans Auxiliary

To the Medical Society of Virginia

At the request of the officers of the Auxiliary, this space has been set aside for communications from them regarding matters of interest, both to the profession and to the women members of their families.

All communications should be addressed to Mrs. E. F. Truitt, Secretary, Westover Avenue, Norfolk, Virginia.

"TO THE DOCTOR'S WIFE.

Into your keeping he has given his heart,
His professional life is a thing apart,
A life that is built on a vision divine,
To minister to all suffering mankind.
A service to which he is giving his life,
But remember his happiness is made by his wife.
So wake up to the vision of what you can do,
To the part in this service that is open to you."

—Addine C. Myers.

The doctors' wives have a wonderful opportunity to make their husbands happy, not only by courage, faith and love but with real service to the medical profession.

If each member of the Woman's Auxiliary would realize that with her rests largely the responsibility for success, and aim at the high standard Mr. Herbert Hoover set when he said: "Fifteen years of concerted organized scientific effort for health, especially of our children, will advance our nation, physically, mentally, morally and economically three generations."

Could there be a more worthy cause for the doctor's wife?

The object of the Woman's Auxiliary is to extend the aims of the medical profession through the wives of the doctors to the other woman's organizations which look to the advancement of health and education; to assist in entertaining at all medical meetings or conventions; to promote good fellowship among the doctors' wives and families; and to aid in such work as may be assigned from time to time by the medical societies.

The women members of the doctors' families are eligible for membership in the Auxiliaries, including wives, daughters, sisters and mothers.

If you have no Auxiliary in your section, meet together at once and organize.

Whether you are members or not, attend the State meeting and aid in the good work.

THE NORFOLK MEETING

Be sure to attend.

There is important business to be done and we promise you a good time.

Remember the date, October 12th to 15th.

SPECIAL REQUEST TO THE DOCTORS

Please hand this page to the women members of your family.

The Truth About Medciine

In addition to the articles enumerated in our letter of June 26th, the following have been accepted:

Lederle Antitoxin Laboratories
Pituitary Extract—Lederle 20 Units
H. A. Metz Laboratories, Inc.
Oscodal
Oscodal Tablets 2 Gm.
H. K. Mulford Company
Erysipelas Streptococcus Antitoxin—Mulford.

NEW AND NON-OFFICIAL REMEDIES

Tribasic Calcium Phosphate.—Tertiary Calcium Phosphate. Tribasic calcium phosphate contains approximately 85 per cent of $Ca_3(PO_4)_2$. It has been proposed for use as an antacid. It has the advantage over alkaline hydroxides, such as magnesium hydroxide, and alkali carbonates, such as sodium bicarbonate, in that, being insoluble, it neutralizes the excess of acid in the stomach but does not produce systemic alkalization. It has been claimed that tribasic calcium phosphate is somewhat constipating.

Calcium Phosphate Tribasic—P. W. R.—A brand of tribasic calcium phosphate—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia.

Thibasic Magnesium Phosphate.—Tertiary Magnesium Phosphate. Tribasic magnesium phosphate contains approximately 70 per cent $Mg_3(PO_4)_2$. Tribasic magnesium phosphate has been proposed for use as an antacid. It has the advantage over alkali hydroxides, such as magnesium hydroxide, and alkali carbonates, such as sodium bicarbonate, in that, being insoluble, it neutralizes the excess of acid in the stomach but does not produce systemic alkalization. It has been claimed that tribasic magnesium phosphate has a laxative action.

Magnesium Phosphate—P. W. R.—A brand of tribasic magnesium phosphate—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia.

Silvol Bougies 5 Per Cent.—Bougies weighing 0.81 Gm. and containing silvol (New and Nonofficial Remedies, 1926, p. 373) 5 per cent in a base composed of oil of theobroma, wool fat, white wax, acacia and glucose. Parke, Davis & Co., Detroit.

Silvol Ointment 5 Per Cent.—An ointment containing silvol (New and Nonofficial Remedies, 1926, p. 373), 5 per cent, in a base composed of petrolatum, wool fat, benzoinated lard and white wax. Parke, Davis & Co., Detroit.

Vaginal Suppositories Silvol 5 Per Cent.—Suppositories weighing 8.45 Gm. and containing silvol (New and Non-official Remedies, 1926, p. 373) 5 per cent, in a base composed of gelatin and glycerin. Parke, Davis & Co., Detroit. (Jour. A. M. A., July 10, 1926, p. 99).

Pituitary Liquid (Surgical)—Armour.—A slightly acid, aqueous solution containing the water-soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, free from preservative. It is standardized to have twice the strength of solution of pituitary, U. S. P. X. For a discussion of the action, uses and dosage, see New and Nonofficial Remedies, 1926, pp. 281-283. The product is supplied in 1 c.c. ampules. Armour and Co., Chicago.

Tetrabromophenolphthalein Sodium Salt—Eastman.—A brand of tetbrophthalein sodium—N. N. R. (formerly called tetrabromophthalein sodium, New and Non-official Remedies, 1926, p. 162). Eastman Kodak Co., Rochester, N. Y.

Tetraiodophenolphthalein Sodium Salt—Eastman.—A brand of tetiothalein sodium—N. N. R. (formerly called tetraiodophthalein sodium, New and Non-official Remedies, 1926, p. 163). Eastman Kodak Co., Rochester, N. Y. (Jour. A. M. A., July 24, 1926, p. 245).

PROPAGANDA FOR REFORM

Shoe Dyes and Aniline Poisoning—Serious poisoning with the now widely used shoe dyes is by no means of uncommon occurrence. The toxic ingredient is the solvent of the pigment and appears to have been either nitrobenzene or aniline. The shoe dyes containing aniline are relatively inoffensive in odor, and for this reason are the more insidious, though less toxic than preparations containing nitrobenzene. The Chicago department of health will require that all shoe dyes bear a warning of their danger. (Jour. A. M. A., July 3, 1926, p. 34).

Filling the Physician's Prescription.—The latest report of the Connecticut Agricultural Experiment Station notes that, of about 300 samples of drugs examined, nearly thirty per cent were substandard or otherwise illegal. An interesting departure from the usual program of inspection is represented by the study of the strength and quality of medicaments obtained on physician's prescriptions. Three simple prescriptions were chosen. In the case of a prescription calling for a solution of potassium iodide of definite strength, twenty-seven of fifty-seven samples examined were within five per cent of the strength demanded; fifteen were within ten per cent of that strength, and fourteen varied from the required strength by more than ten per cent. Again, in the instance of a prescription calling for a solution of arsenous acid of the strength stated in the United States Pharmacopoeia, two of twenty-two samples examined were not the article demanded but another preparation of like arsenic content (Fowler's solution); nine varied from the required strength by more than ten per cent, and ten samples were within ten per cent of the strength demanded. The third prescription called for aromatic spirit of ammonia. Of forty-three samples examined, twenty-five were less than ninety per cent of the required ammoniacal strength. (Jour. A. M. A., July 3, 1926, p. 35).

The Germicidal Properties of Soap.—The assertion that solutions of soap may exert germicidal effects is credited to Robert Koch. His assertion has not been generally accepted. The customary view is that the value of soap rests on its cleansing powers, that is, by its property of removing germs mechanically. Lately, however, it has been shown that soaps are destructive to many varieties of microorganisms. Thorough washing of the hands with ordinary soap will destroy any adhering diphtheria bacilli, streptococci and pneumococci. There are microorganisms that seem to be unaffected by the soaps of some of the fatty acids. Foreign substances interfere markedly with the germicidal action of soap. (Jour. A. M. A., July 3, 1926, p. 37.)

Diathermy.—For the local application of medical diathermy, that is, the heating within physiologic limits of well defined parts of the body, it is permissible to raise the temperature to from 40 to 45 C. (104 to 113 F.) with the proviso that the individual tolerance be taken into consideration. Temperatures beyond 45 C., while not necessarily leading to complete coagulation of albumin, produce injury in the tissues. In general diathermy, usually called autocondensation, the safety limit is the raising of the temperature up to 2 degrees C. (3.6 degrees F.) above normal. Higher temperatures are apt to lead to severe disturbances. The desirable physiologic and therapeutic effect is brought about by moderate heating, causing an active hyperemia and the subsequent amelioration of the local metabolism. (Jour. A. M. A., July 3, 1926, p. 50).

Glyeuthymenol.—In the information furnished the Council on Pharmacy and Chemistry by the proprietors, Glyeuthymenol was stated to have the following composition: thymol, 30 grains; menthol, 20 grains; eucalyptol, 20 minims; synthetic oil of wintergreen, 30 minims; Indian gum powder, 3½ pounds; sodium benzoate, 10 ounces; glycerin, 2½ gallons; zinc sulphate, 6 ounces, and water, 7½ gallons. The Council reported that the advertising designates Glyeuthymenol as a "vaginal prophylactic" and stresses its use as a preventive of gonorrhea and as a contraceptive. The Council concluded that Glyeuthymenol is an unscientific mixture that is sold with claims which are misleading and unwarranted and that its use is inimical to the public health. (Jour. A. M. A., July 3, 1926, p. 51).

Methenamine.—Methenamine is the name now used in the new U. S. P. X, for the substance described in the old pharmacopeia as hexamethylenamine; it is a more convenient contraction of the scientific name hexamethylenetetramine. (Jour. A. M. A., July 3, 1926, p. 51).

XUM

The Action of Acetanilid.—The use of acetanilid, phenacetin, and other aniline derivatives may bring about symptoms similar to those of aniline poisoning. For acetanilid it has been shown that, like the mother substance, aniline, it also fails to produce methemoglobin despite the allegations of a positive sort in the medical literature. The action of acetanilid on the blood, heart, and circulation is essentially the same as that of aniline. Both form para-aminophenol in the body, and this may account in part for the cyanosis sometimes observed. Prolonged administration of sublethal doses of acetanilid also produces anemia and emaciation. (Jour. A. M. A., July 10, 1926, p. 103).

Animasa Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Animasa, according to the Organotherapeutic Corporation, New York, is "a preparation obtained from intima and media of arteries of young and sound fat cattle, foetal extract, by-products of erythrocytes and serum." According to the Organotherapeutic Corporation, Animasa represents "the new method of treating hypertonus and arteriosclerosis." The Council found Animasa unacceptable for New and Nonofficial Remedies because it is a preparation of indefinite composition; because no evidence is submitted to show that its composition and uniformity are controlled; and because it is marketed with unwarranted therapeutic claims. (Jour. A. M. A., July 10, 1926, p. 116).

Sulcitacium Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that "Sulcitacium" is the name applied by the Davis-Johnson Co., Chicago, to capsules proposed for the treatment of hypertension. The advertising which the Davis-Johnson Co. sends out contains no definite statement of the composition of Sulcitacium; it is declared to be "a combination of the soluble mineral salts found in the normal blood plasma." The Council states that, as evidence for the effectiveness of treatment with Sulcitacium, case reports by a physician are offered; that there appears to be no support, either in physiology or in internal medicine, for the claim that administration of any quantity of inorganic salts normal for the blood will control essential hypertension; and that the records of the case do not allow of the conclusion that the use of the remedy causes the continued lowering of blood pressure. The Council declared Sulcitacium unacceptable for New and Non-official Remedies because its composition is not declared and because the therapeutic claims advanced for it are not supported by acceptable clinical evidence. (Jour. A. M. A., July 10, 1926, p. 116.)

L'Oreal Henne.—The A. M. A. Chemical Laboratory found the hair dye L'Oreal Henne (F. L. Lebeau, Inc., New York City), to consist of two packages: one containing a white powder, the other a yellow substance. The white powder responded to tests for sodium perborate. The yellow substance was apparently composed of iron and copper salts with pyrogallol and vegetable matter. (Jour. A. M. A., July 10, 1926, p. 118).

The Present Status of B. Acidophilus and B. Bulgaricus Therapy.—Recently the question was brought before the Council whether the successful implantation of *B. acidophilus* might be secured in other ways than through administration of *Bacillus acidophilus* milk, and the question was also raised whether *Bacillus bulgaricus* preparations were worthy of continued recognition. To obtain information on these and related questions, a questionnaire was sent by the chairman of the Council's Committee on Lactic Acid Ferment preparations to his associates on the committee and to others known to have studied the *Bacillus acidophilus* problem. As a result of the information which was obtained, the Council decided: (1) *Bacillus acidophilus* milk and broth cultures and concentrates of *B. acidophilus* will continue to be accepted, provided the preparations are marketed under nonproprietary descriptive names; provided the number of viable organisms contained in a stated quantity at the time of sale is declared on the label or in the advertising; provided the label bears an exp.ration date; and provided that for broth cultures and concentrates the advertising emphasize the need of carbohydrate (lactose or dextrin) administration. (2) Other preparations of *B. acidophilus*, such as tablets, emulsions and candies will not be accepted unless adequate evidence is presented to show that the implantation of *B. acidophilus* may be secured through their use. If such evidence becomes available, they will be accepted under the conditions outlined under (1). (3) *Bacillus bulgaricus* preparations will be retained, provided the claims for these are revised in accordance with modern opinion to show that they are considered to be of value only in the preparation of soured milk and that all claims for their intestinal implantation and for their value as external application be discontinued. (Jour. A. M. A., July 17, 1926, p. 172).

The Effects of Carminative Volatile Oils.—An investigation into the effects of the oils of peppermint, cinnamon, anise, caraway, wintergreen, fennel and orange indicates that the primary effect of these carminatives in concentration and doses comparable to those used clinically, is to relax the stomach and increase the tone and contraction of the small intestine and colon. Relief of discomfort by carminatives after a full meal can be understood easily in view of the relaxation produced by them; while in the intestine the effects of distention with gas or fluids would be relieved by increase in tone and contraction. (Jour. A. M. A., July 17, 1926, p. 176).

The La-Mar Reducing Soap Fraud.—H. J. Brown, of Cleveland, Ohio, has been quacking it for years. His latest piece of fakery was carried on under the tradename, "La-Mar Laboratories"—although there were no laboratories—and the product he sold was La-Mar Reducing Soap. Every physician knows, and the majority of intelligent laymen know, that there is no soap or other substance which, when rubbed on the surface of the body, will reduce weight. Nevertheless, newspaper and magazine publishers have accepted H. J. Brown's money and have aided him in swindling the public with the La-Mar Reducing Soap. Now, the post office authorities have denied the further use of the mails to this fake; but, while the mail order swindler lays himself open to prosecution, the newspaper or magazine which makes the swindle possible is exempt from punishment. (Jour. A. M. A., July 17, 1926, p. 189).

Bannerman's Intravenous Solution.—Physicians are receiving advertising from Bannerman's Intravenous Solution proposing its use in the treatment of varicose veins. This same remedy is recommended also for "Tuberculosis," "Pneumonia-Influenza," "Septicemia and Acute Infectious Diseases," "Anemia," "Rheumatism," "Syphilis," "Nephritis," "Chronic Endocarditis," "Chronic Abscess," "Arthritis Deformans," and "Puerperal Sepsis." The nostrum is marketed by the Wm. Bannerman Co., Chicago. The original Bannerman was a veterinarian. The preparation was refused recognition by the Council on Pharmacy and Chemistry in 1915, because vague, indefinite, and misleading statements were made in regard to its composition; because it was recommended for anemia, tuberculosis, and syphilis under

grossly exaggerated and unwarranted claims; and because the intravenous injection of complex and indefinite mixtures is unscientific and dangerous. It is not doubted that this mixture injected intravenously might cause "the veins for a certain distance from the point of injection" to become "more or less indurated" or "after from one to three or more injections . . . practically obliterated." Nor is there any doubt that "a fee of from $25 to $300 can be had for the treatment." There is, however, a very great certainty that the intravenous injection of such a shotgun mixture may result in far more serious consequences to the patient than the payment of a large fee and the induration or obliteration of a few veins. (Jour. A. M. A., July 17, 1926, p. 191).

Classification of Mercurials.—The A. M. A. Chemical Laboratory has attempted to work out a method of laboratory investigation and classification of mercurials. A method of evaluating the ionization of the mercury in mercury compounds used in medicine in the belief that this may have a direct bearing on their local irritant and antiseptic action was determined. This method was a modification of the Dreser yeast method which has been adopted in the new Pharmacopoeia as a means of testing the silver protein compounds contained in the book. According to the results yielded with this method, the commonly used mercury compounds fall into four distinct classes from the standpoint of ionization. Expressing this in terms of "Efficiency for equivalent of mercury" with mercuric chloride as unity, the first class comprises mercuric bromide and chloride, mercuric potassium iodide, mercuric succinimide, sublamine and metaphen, decreasing in this order from 1.7 units to 0.36 unit. In the second class come the freely ionizable compounds with correspondingly mild irritation; mercuric oxycyanide, cyanide and benzoate, and meroxyl. The third group includes mercurosal and the mercury-fluorescein dyes, mercurochrome, and flumerin. In the fourth class come afridol, which does not ionize enough, and mercuric salicylate, which does not dissolve sufficiently to affect the yeast sensibly. (Jour. A. M. A, July 24, 1926, p. 246).

National Goiter Treatment.—At Mason City, Iowa, a concern known as the "National Goiter Treatment Corporation" has been treating goiter on the mail order plan. The A. M. A. Chemical Laboratory examined two specimens of the "treatment." One contained the equivalent of 0.12 Gm. (1.8 grains) of potassium iodide per dose. The dangers of administering iodides in cases of hyperthyroidism are obvious enough to physicians, but would not be obvious to the general public even if those who took the National Goiter Treatment were in a position to know what they were getting. (Jour. A. M. A., July 24, 1926, p. 263).

Murarsenide Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Murarsenide is the noninforming name applied by the Miller Biological Laboratories, Los Angeles, Cal., to a solution marketed in the form of ampules, claimed to contain in each 10 c.c. (one ampule): sodium dimethylarsenate (sodium cacodylate), 0.7 Gm.; mercuric oxycyanide, 0.004 Gm.; and sodium iodide, 0.5 Gm. The preparation is proposed for the treatment of syphilis and is to be administered intravenously. The advertising leads to the inference that "Murarsenide" presents an advance in the therapy of syphilis and that the arsenic compound contained in it is an advance over arsphenamine. The claims of originality are unwarranted. Preparations containing sodium cacodylate, a salt of mercury and an alkali iodide have been marketed for many years; further, sodium cacodylate has been shown to be inefficient in the treatment of syphilis; and there is no rational basis for the simultaneous administration of arsenic, mercury and iodide in the treatment of syphilis. The Council found Murarsenide inadmissible to New and Non-official Remedies because it is an unscientific pharmaceutical mixture marketed with misleading statements of composition, under a noninforming name and with unwarranted therapeutic claims. (Jour. A. M. A., July 31, 1926, p. 343).

Phenoseptine Powder and Phenoseptine Cones Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Phenoseptine Powder, marketed by the Mertes Remedy Co., San Francisco, Cal., is stated to be composed of "Boracic Acid 75 per cent, Zinc Phenolsulphonate 18 per cent, Phenol, Menthol, Thymol and Eucalyptol 7 per cent." The Council further reports that in contradiction of the claims in the advertising, the Mertes Remedy Co. states that Phenoseptine Cones are made from the formula of Phenoseptine, only adjusted to meet that form of administration. The Council found Phenoseptine Powder and Phenoseptine Cones unacceptable for New and Non-official Remedies because their composition is indefinite and needlessly complex; because they are marketed under names that are not descriptive of their composition, and with therapeutic claims that are unwarranted; and because the recommendation on the trade packages invites their ill advised use by the public in diseases which require correct diagnosis and medical treatment. (Jour. A. M. A., July 31, 1926, p. 343).

Trypsogen.—Trypsogen, G. W. Carnrick Co., is a pancreatic preparation for oral use claimed to have a curative action in diabetes. In an article published under the auspices of the Council on Pharmacy and Chemistry it is stated that reliance on the oral administration of the pancreatic preparations thus far prepared has so little justification in the treatment of diabetes that such practice merits the most vigorous condemnation. It is pointed out that the claim that such preparations exert, in some mysterious manner, a rejuvenating or stimulating action on the diseased pancreas is based on uncontrolled clinical observation and chiefly on testimonials deserving no more consideration than do the similarly ill founded claims of the vendors of "patent medicines." (Jour. A. M. A., July 31, 1926, p. 345).

Book Announcements

Gould's Medical Dictionary. Containing all the words and phrases generally used in Medicine and the Allied Sciences, with their proper Pronunciation, Derivation, and Definition. By GEORGE M. GOULD, A. M., M. D., Author of "An Illustrated Dictionary of Medicine, Biology, and Allied Sciences," "Pocket Medical Dictionary," etc. Edited by R. J. E. Scott, B. C. L., M. D., Editor of "Witthaus' Text-book of Chemistry," Hughes' "Practice of Medicine," Gould's "Practitioner's Medical Dictionary," etc. BASED ON RECENT MEDICAL LITERATURE, with Many Tables. Philadelphia. P. Blakiston's Son & Co., 1012 Walnut Street. 8vo of 1,398 double column pages. Flexible Leather. Price $9.00.

As new words seem to be coined constantly, this Dictionary fills a great need. About 76,000 words are included and many illustrations and tables add materially to its value. It

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is based upon current medical literature, and contains the terms in use in the related sciences, such as Chemistry, Pharmacy, Biology, etc. The constant aim of the publisher and editor is to make each edition more accurate, more comprehensive, and more helpful than preceding editions. The fact that nearly 700,000 volumes are being used throughout the world attests the great popularity of this book.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations. By CHARLES LOCKE SCUDDER, M. D., F. A. C. S., Consulting Surgeon to the Massachusetts General Hospital; Formerly Assistant Professor of Surgery at the Harvard Medical School. Tenth Edition, Revised. Philadelphia and London. W. B. Saunders. 1926. 8vo of 1,240 pages with 2,027 illustrations. Polished buckram. Price, $12.00 net.

Scudder's has undergone a very thorough revision, if one may judge by the 64 per cent increase in the number of pages and 62 per cent addition in illustrations. Dr. Joseph C. Bloodgood has contributed a chapter on Pathological Fractures; Dr. F. W. Bancroft, of Columbia University, one on Bone Repair; and Dr. K. H. Thoma, of Harvard, one on Fractures of Maxilla and Mandible.

With the increased trauma incident to this rapid automotive age and the demands for increased efficiency in surgical achievements, the new edition of this acknowledged classic will be welcomed by the man in general practice, who has the first responsibility; by the roentgenologist, the umpire; and the general surgeon, whose utmost skill is often required to bring about satisfactory end results.

The ancient gibe—"A doctor's mistakes are six feet under ground"—was never said about a fracture.

Electrothermic Methods (Desiccation and Coagulation) **in the Treatment of Neoplastic Diseases.** Designed as a Practical Handbook of Surgical Electrotherapy for the Use of Practitioners and Students. By J. DOUGLAS MORGAN, M. D., formerly radiologist, Ross Pavilion, Royal Victoria Hospital, Montreal; Instructor in Radiology, University of Pennsylvania, Graduate School of Medicine, Philadelphia, Pa., etc. Philadelphia: F. A. Davis Company, Publishers. 1926. 8 vo. of 172 pages, illustrated with 36 line and half-tone engravings. Cloth. Price, $2.50 net.

The X-Ray in Embryology and Obstetrics. By W. A. NEWMAN DORLAND, M. D., F. A. C. S., Professor of Gynecology and Obstetrics and Head of the Department of Obstetrics in the Post-Graduate Medical School of Chicago; Author of "The American Illustrated Medical Dictionary," etc., and MAXIMILIAN JOHN HUBENY, M. D., F. A. C. R., F. A. C. P., Editor of **Radiology**; Director of the Department of Radiology of the Physicians and Surgeons Institution, etc. Bruce Publishing Company, Saint Paul, Minn., 1926. 8vo of 420 pages, profusely illustrated. Cloth. Price, $10.00.

Practical Materia Medica and Prescription Writing, With Illustrations. By OSCAR W. BETHEA, M. D., Ph.G., F. C. S., Professor of Clinical Therapeutics, Tulane School of Medicine; Professor of Therapeutics, Tulane Graduate School of Medicine; Formerly Professor of Chemistry and Professor of Pharmacology, Mississippi Medical College, etc. FOURTH REVISED EDITION. Philadelphia. F. A. Davis Company, Publishers. 1926. 8vo of 498 pages. Cloth. Price $4.50 net.

The Modern Treatment of Hemorrhoids. By JOSEPH FRANKLIN MONTAGUE, M. D., F. A. C. S., of the Rectal Clinic, University and Bellevue Hospital Medical College; Fellow of the American Proctologic Society, etc. Foreword by HARLOW BROOKS, M. D., F. A. C. P., Professor of Medicine, University and Bellevue Hospital Medical College; Fellow of American Gastro-Enterologic Society, etc. Philadelphia and London. J. B. Lippincott Company. 8vo of 296 pages with 116 illustrations. Cloth. Price $5.00.

Cannula Implants and Review of Implantation Technics in Esthetic Surgery. In Two Parts. By CHARLES CONRAD MILLER, M. D. The Oak Press, 358 West Madison Street, Chicago. 1926. Small 8vo of 178 pages, with 11 illustrations. Cloth. Price, $2.00.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Forty-Seventh. Philadelphia. Printed for the College. 1925. Octavo of 844 pages. Cloth.

Cause and Cure of Juvenile Delinquency.

"Conflict with parental authority," and "thoughtless pranks" caused two-thirds of the juvenile delinquency cases brought against boys under 18 in seven Pennsylvania counties, while one-half of the girls' cases originated in complaints of parents that the girls were unmanageable or had run away, according to an analysis recently made by Dr. Neva R. Deardorff, Executive Secretary of the Children's Commission of Pennsylvania.

"The principal task now would seem to be not the stemming of a rising tide of juvenile delinquency by emergency measures," concludes Dr. Deardorff, "but the opening of channels for getting to parents, teachers, officials and all others who must deal with children, first the stores of readily available easily applied methods for the fostering of physical and mental health, and, second, of expert aid in especially difficult problems.

Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874.
OWNED BY THE MEDICAL SOCIETY OF VIRGINIA.
PUBLISHED BY THE PUBLISHING COMMITTEE.

A. G. BROWN, Jr., M. D., Chairman, Richmond, Va.
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P. W. HOWLE, M. D., Richmond, Va.
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AGNES V. EDWARDS, Business Manager and Secretary-Treasurer.

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance.
Single Copies 20c.

Vol. 53. SEPTEMBER, 1926 No. 6

Editorial

The Liver.

The next meeting of the Medical Society of Virginia will consider the liver as a special subject. From time to time this column has taken occasion to comment upon the liver in its various fields of medical interest. It is fortunate for the Society that the symposium on this selected subject is placed in the hands of men so well prepared to present succinctly the several phases to be considered. Besides the selected members of the Virginia Society, a distinguished member of the Mayo Clinic, Dr. Mann, will discuss the physiology of the liver. One may well attend upon Dr. Mann's discussion. He has done, with the collaboration of others at the Mayo Clinic, work upon the liver that has made his name known the world over. This research work by Mann has cleared a number of misty points and brought to light real facts that have heretofore been suspected but unproven. It is with the belief that repetition and reiteration in medical problems is beneficial that comment upon the liver is again brought forward here.

Sir Humphrey Rolleston and the diseases of the liver are almost synonymous terms: so broad and complete have been the clinical and literary accomplishments of this physician and author in this field. His text-book and monographs may well be considered as ranking in the forefront of present day efforts in the problems of the liver. Hence one may take his monograph in the recent Oxford Press as the source, based upon a bibliography therein published, for much that shall be found in this column now.

Functional Disorders of the Liver

Bile secretion is a leading and impressive function of the liver. Bile salts are manufactured by the liver cells. But the bile pigments, giving color to the bile, are eliminated by means, and as ingredients, of the bile, having origin in hemoglobin and endothelial cells "in other parts of the body." One should recognize the difference between the bile salts and the bile pigments. Bile salts are definitely charged with digestive properties in the intestines in connection with fat. Fat in the intestines is dependent upon bile salts during the first stages of digestion. Bile salts may act with stimulating or hormone properties upon the external secretion of pancreas (pancreatic juice). Bile pigments may possess properties of function in intestinal digestion. But upon the face of the returns from recent studies of the bile, one may venture to remark that the pigment (bile coloring matter) is an excretion throwing into the intestines effete material of blood tissues. May not the intestines be for the liver excretions what, in part, the bladder is for the kidney excretions?

The volume of bile flow may be as important as the volume of urine flow. The suppression of bile may be relatively as significant, although not so vitally, as urine suppression. The function of the liver cells in manufacturing bile for secretory action and excretory action takes on a new significance in the light of present-day findings and probabilities. The liver unfortunately gives few outward signs of suppression before jaundice appears. When hepatogenous or hematogenous jaundice appears, one has no longer to question that liver cells or bile flow is at fault.

The glycogen function of the liver cells is an outstanding one. The formation and storage and hydrolysis of glycogen by the liver occupies a strategic point in carbohydrate metabolism. The liver, receiving the first quota of carbohydrate foodstuff, partially converted from the first stage of digestion in the intestines, always stands as a storage plant for the carbohydrate metabolites, discharging into the blood amounts required to maintain normal blood sugar levels.

Jaundice

Jaundice may be likened to oedema. It is a symptom of bile obstruction, or suppression; like urinary oedema, it is the result of suppression of urinary flow, or urinary retention. Like albuminuria, also, it may show in the urine as

a symptom. If urine is retained too much by the body, the urine discharged shows albumin and casts; if bile is retained by the body, the urine shows bile pigments in urine and bile color taints in the skin.

Jaundice may be divided into obstructive, hemolytic and infective, toxic, hemohepatogenous, jaundice.

Rolleston, in common with others, subdivides obstructive jaundice into four pathologic types. First, obstructive may occur from within the lumen of bile ducts: (a) gall-stones; (b) inspissated bile or mucus; (c) parasites; (d) carcinoma. Second, changes in the walls of the ducts; (a) swelling from inflammatory pathology (cholangitis); (b) stricture; acquired or congenital; (c) primary tumors (papillomas). Third, pressure on ducts from without by tumors, enlarged glands or inflammatory adhesions; (a) intrahepatic carcinoma, gumma, etc.; (b) enlarged glands in the portal fissure, resulting from carcinoma in liver, gall-bladder, stomach, or from tuberculosis, syphilis, etc.; (c) pancreatic lesions: (1) chronic pancreatitis and carcinoma of head of pancreas; (2) calculus in duct of Wirsung. Other rare pathologic conditions. Fourth, torsion or kinking of ducts, resulting from ptosis, etc.

Hemolytic jaundice results probably from fragility of red blood corpuscles, undergoing hemolysis. The association of splenic enlargement with this is common, but the causes of fragility of red cells and splenic enlargement is not determined. The endothelial cells in the spleen "probably play a part both in hemolysis and in the formation of bile from the liberated hemoglobin." This kind of jaundice is hematogenous, resulting from the formation of bilirubin in the circulation. The clinical picture of these patients resembles that of pernicious anemia, but the blood examination, showing leukocytosis with myelocytes and eosinophilia, differentiates it from pernicious anemia.

Toxic and infective jaundice results from some general infection or intoxication. It is seen in cases of septicemia, pneumonia, or chloroform and phosphorus poisoning. The jaundice here is not profound. The evidence of general sickness is greater than the degree of jaundice.

Infective jaundice has been noted frequently in the literature since the war, and much remains unknown concerning its bacteriology. Acute yellow atrophy of the liver occurring from some poison like chloroform or arsphenamin is characterized by a jaundice. The necrosis of liver cells produces a flabby, wrinkled organ without function. Phosphorus poisoning brings about a jaundice of the same type when a sufficient area is involved. Fatty degeneration of liver cells and obstruction of bile tracts produce jaundice, due to loss of bile-forming power of the liver.

Gall-Stone Formation

The fundamental factor in gall-stone formation appears to be the infection in hypercholesterinemic persons who also have a high cholesterin content in bile. Cholecystitis, high cholesterin-charged bile, with stagnation in gall-bladder or gall duct, combine to produce the factors essential in the making of biliary calculus. One may ask then, what are the conditions of life that produce high cholesterin bile? (1) Advanced age; (2) women more than men; (3) white race; (4) diet rich in fat and carbohydrates; (5) overweight; (6) infection.

Infection may come to the gall-bladder by the blood or lymph from such diseases as pneumonia, influenza, tonsillitis, pyelitis, oral infections (acute and chronic) septicaemia, erysipelas. Infections may reach the gall-bladder from the alimentary tract in such infections as appendicitis, typhoid fever, enteritis, amebic dysentery, colitis (acute and chronic).

Cirrhosis

Cirrhosis of the liver may be considered a state of advanced or late liver pathology, involving in terminal degree much of its functional capacity, vascular structures and bile draining system. Such a chronic change of this organ results only after prolonged influence of some strongly harmful group of causes upon its tissues. Cirrhosis of the liver then occurs in various forms and has been classified, on account of its clinical features, in many ways. But when all is said, one may remark that cirrhosis strikes a deadly blow at the function of liver cells—as to carbohydrate storage, as to urea formation, as to fat metabolism, and as to bile secretion and excretion. Cirrhosis here looms as a process of an ominous sort in the pathologic evolution of the organ.

Overfeeding, alcoholism, infection may be given as the most frequent of its general causes. These factors assume many combinations and variations, but usually in one way or another operate, in combination or singly, to bring about cirrhotic changes in the liver.

Rolleston gives us the following classification which may serve well as a synopsis of cirrhosis:

(a) Portal, multilobular or common cirrhosis.

Special forms: Pigment cirrhosis, cirrhosis in children.

(b) Biliary cirrhosis.

(1) Hypertrophic (Hanot's).

(2) Obstructive.

News Notes

Come One, Come All, to Norfolk, Next Month!

For the Local Committee says Norfolk expects to make this meeting of the *Medical Society of Virginia* one of the most memorable since its organization. The committee has taken hold with zest, and the meeting is bound to be a great success.

Dates selected for the meeting, October 12, 13, 14 and 15, are in the early Fall, which is the ideal season of the year in Tidewater Virginia, with warm spring-like days and cool pleasant nights. The seashore at this season is beautiful and idyllic by day, and fittingly so for lovers only at night (so a member of the local committee states).

There is always something going on in Norfolk—amusements galore. There are two large new theatres for continuous performances, besides one for high class performances, and numerous picture houses.

Norfolk with its metropolitan air appeals to all. Sea food here is plentiful from the bountiful waters of the Chesapeake.

Scientifically, the Norfolk County Medical Society welcomes you, with its library of three thousand volumes, and full time librarian who will be at your service. The library is housed on the top floor of the Medical Arts Building.

Every doctor in the Society should come to Norfolk and be prepared to stay for the full time of the meeting and continue the vacation over the week end if possible. The Norfolk doctors wish a large attendance and welcome all.

It is announced that there will be an oyster roast at Cape Henry for the doctors and the lady members of their families, as well as other entertainments.

So much has been said about the pleasures to be expected, from information given by the local committee, that we wish to state that the fifty-seventh annual meeting of the Society will in no way be a second-class one as far as its scientific program is concerned, either. We have a large number of papers, which includes a symposium on "The Liver." Arrangements have been made to have all of these papers discussed.

We are exceedingly fortunate in the guests selected by our president, Dr. W. L. Harris, of Norfolk. They are Dr. Walter A. Wells, of Washington, D. C., who will speak on the first evening, Dr. Frank C. Mann, of the Mayo Clinic, Rochester, Minn., who will have a paper in the subject for general discussion, and Dr. Roger H. Dennett, of New York City, who will speak on a pediatric subject. Dr. Olin West, secretary of the American Medical Association, has also accepted an invitation to be with us, and will speak at one of the general meetings.

The Monticello Hotel will be headquarters for the meeting and both meetings and exhibits, as well as the meetings of the Woman's Auxiliary, will all be held there. It is always wise to make hotel reservations in advance. If you are not familiar with names of the local hotels, Dr. Southgate Leigh, chairman of the Hotel Committee, will be glad to offer you such service as you wish.

The Woman's Auxiliary is becoming an active factor in our State meetings, and doctors are urged to bring their wives and daughters. The Norfolk branch of the Woman's Auxiliary is an especially live one and, as Mrs. Southgate Leigh, of Norfolk, is president of the Woman's Auxiliary of the Medical Society of Virginia, every effort will be made to make this an unusually interesting and pleasant meeting.

Following is a list of the chairmen of the Committee on Arrangements:

GENERAL CHAIRMAN—Dr. Israel Brown.

RECEPTION AND AUTOMOBILES—Dr. J. Warren White.

BADGES, PRINTING AND PUBLICITY—Dr. E. C. S. Taliaferro.

GOLF—Dr. B .R. Kennon.

ENTERTAINMENT—Dr. W. E. Driver.

SCIENTIFIC EXHIBITS—Dr. Wm. B. Newcomb.

COMMERCIAL EXHIBITS, HOTELS AND MEETING HALLS—Dr. Southgate Leigh.

LADIES—Mrs. Southgate Leigh.

XUM

The Chairman of the Committee on Scientific Exhibits asks us to state that his Committee is very anxious to stimulate an increased interest in these exhibits, and would especially like to increase the number of exhibits. They feel that the medical schools in the State, as well as many hospitals, clinics, and individual physicians must have much that would be most interesting to show.

This Committee will be very pleased to cooperate in arranging whatever space or other material may be required to make a favorable display. Any one interested in having a scientific exhibit, should address Dr. Wm. B. Newcomb, chairman, 220 West Freemason Street, Norfolk.

Golfers should advise Dr. B. R. Kennon, Taylor Building, Norfolk, promptly, if they wish to enter the golf tournament, which is scheduled for Tuesday, the 12th of October. That golf cup, donated three years ago by the Roanoke Academy of Medicine, to be held permanently by the winner of two consecutive tournaments, is still at stake.

So much has been and is being planned for this meeting, that every member of the State Society should attend.

Norfolk's Attractions as a Convention City.

Norfolk, where the Medical Society of Virginia will hold its annual convention on October 12, 13, 14 and 15, has much to offer the visitor in historical interest and opportunities for recreation.

In the military and naval history of the United States the area around Norfolk has always played an important role. The Norfolk Navy Yard, the coast artillery posts at Fortress Monroe and Fort Eustis, the Hampton Roads Naval Operating Base and the Aviation centers at Langley Field—all are worth visiting. Thousands upon thousands of men either trained at Norfolk during the World War or passed through the port on their way to France.

The twenty-five miles of white sand beach extending from Willoughby through Ocean View, Lynnhaven and Ocean Park on the Chesapeake Bay to Cape Henry and Virginia Beach on the Atlantic Ocean constitute America's ideal all year playground. The location of this fine stretch of beach is full of fascinating places for recreation—swimming, surf bathing, hunting, fishing, hiking, horseback riding, yachting, etc.

As for golf, there is no finer course anywhere than the famous Princess Anne, cut through a forest of stately pines on the edge of the ocean at Virginia Beach. And in the Norfolk-Portsmouth section there are many other beautiful and sporty courses.

For those who like fishing Norfolk offers rare sport. In Chesapeake Bay, in the ocean, and in inland waters there is an abundance of fish of many varieties. Confirmed sea food epicures delight in the justly famous Lynnhaven oysters. There is no better duck shooting anywhere on the Atlantic coast than in the Back Bay section south of Norfolk. The duck season attracts thousands of sportsmen from all over the country.

Late Vacationists.

Dr. Reid White, Lexington, Va., spent part of August visiting a son in Asheville, N. C.

Dr. and Mrs. G. A. Ezekiel recently returned to their home in Richmond, after a visit to Mrs. Ezekiel's mother in Baltimore.

Dr. Alexander McLeod and family, of Glen Allen, Va., motored to Canada, about the middle of August and spent several weeks visiting there.

Dr. and Mrs. Paul W. Howle, son and daughter are again at their home in Richmond after a tour of Southern Europe, England and France.

Dr. and Mrs. M. H. Watson and son, of Chatham, Va., have been on a visit to relatives at Afton and Charlottesville, Va.

Dr. Mary Baughman and her mother have returned to their home in Richmond, after a motor trip. While away they visited relatives in Oakland, California.

Dr. and Mrs. W. P. Jackson returned to their home in Roanoke, the latter part of August, after a visit in Richmond.

Dr. J. W. Hannabass and family, of Richmond, are home again after a visit to Roanoke, Va.

Dr. H. E. Jordan, University, Va., has been spending some time at Ocean Grove, N. J.

Dr. and Mrs. Thomas F. Gill and sons are again at their home in Richmond, after a vacation spent at Colonial Beach, and in the mountains of Virginia.

Dr. H. B. Mulholland, University, Va., spent his vacation at Camp Allegheny, in Greenbrier County, West Virginia.

Dr. Charles C. Haskell has returned to his home in Richmond, after a visit to Rockbridge Baths, Va.

XUM

Dr. and Mrs. J. N. Elder, Hopewell, left the latter part of August for Cambria, Va., to visit Mrs. Elder's mother.

Dr. and Mrs. Carrington Williams and sons, Richmond, left by motor, the latter part of August, for Cape May, N. J., where they joined friends for a vacation.

Dr. A. M. Showalter, Cambria, was a recent visitor in Lynchburg, Va., having been called there professionally.

Dr. J. C. Bodow returned to his home in Hopewell, Va., the latter part of August, after a fishing trip to Gloucester Point, Va.

Dr. Elbert Talbot has returned to Richmond, after a visit to Rochester, Minn., where he attended the Mayo Clinics for a time.

Dr. and Mrs. H. M. Snead and children, of South Hill, Va., spent their vacation with relatives at Fork Union, Va.

Dr. R. F. Thornhill, Pulaski, spent the latter part of August with a party of friends on a motor trip to Canada.

Dr. Wm. R. Weisiger, Richmond, is home again, after spending a couple of weeks at the rifle range at Virginia Beach.

Dr. and Mrs. D. H. Mason, Ridgeway, Va., spent their vacation visiting relatives in Sussex County, Va.

Dr. and Mrs. A. P. Traynham and son, of Richmond, are home again after a visit to Dr. and Mrs. B. L. Traynham at Old Sweet Springs.

Dr. L. A. Robertson, Danville, Va., has been on a vacation in California.

Dr. and Mrs. G. H. Musgrave returned to their home in Richmond, last month, after a visit to friends in Southampton County, Va.

Dr. John Shackelford, Martinsville, Va., spent a pleasant vacation on a fishing trip in Maine.

Dr. W. T. Oppenhimer, Richmond, recently spent some time in Washington, D. C.

Dr. Charles E. Dyer, Pulaski, Va., was a recent visitor in Alexandria, Va., where he was one of the representatives from the Pulaski County Post to the grand encampment of the American Legion.

Dr. Claude Moore, Roanoke, Va., has been vacationing at Crockett Springs, Va.

Dr. N. W. File, Lynchburg, Va., recently visited his parents in Buckingham County, Va.

Dr. and Mrs. M. H. Harris and daughter, West Point, Va., spent some time in August visiting Dr. Harris' father in Louisa, Va.

Dr. W. W. Wilkinson and family, of La Crosse, Va., took a motor trip through the Valley of Virginia, last month.

Dr. A. G. Brown, Jr., and family have just returned to their home in Richmond, after a vacation at Woodberry Forest, Va.

Dr. and Mrs. A. P. Bohannon, Virgilina, Va., recently visited relatives at Saluda, Va.

Dr. W. L. Harris, Norfolk, left the latter part of August, by boat, for Boston, Mass., and motored from there to Maine. Following a two weeks' fishing trip, he will motor back, arriving home about the end of September.

Dr. Guy Hinsdale returned to his home at Hot Springs, Va., early this month, after spending the summer at Kennebunkport, Maine.

Dr. Henry A. Hornthal, Potomac, Va., and Washington, D. C., returned the last of August from a two weeks' stay at Greenbrier Hotel, White Sulphur Springs, W. Va.

Dr. R. Lester Hudgins and family have returned to their home in Farmville, Va., after spending August at Virginia Beach.

Dr. E. E. Feild, Norfolk, Va., has been spending the summer at Crockett Springs, Va.

Dr. and Mrs. A. L. Wellford, Richmond, spent a vacation recently as guests of their son in Pulaski, Va.

Dr. and Mrs. C. T. Carter, Danville, Va., are home again after spending several weeks in Nova Scotia.

Dr. and Mrs. J. W. C. Jones, Newport News, Va., spent most of August at Warm Springs, Va.

Dr. W. R. Whitman, Roanoke, visited his mother in Pulaski, Va., last month.

Dr. F. M. Hisey returned to his home in Edinburg, Va., about the middle of August, after being for a time at Memorial Hospital, Winchester, Va.

Dr. and Mrs. J. F. Geisinger, and son, of Richmond, have returned home after a vacation in the mountains of western North Carolina.

Dr. and Mrs. Cullen S. Pitt have returned to their home in Richmond, after a motor trip through New York and Pennsylvania, where they visited many places of interest.

Dr. T. W. Edmunds, Danville, Va., with a party of friends, visited White Sulphur Springs, W. Va., last month.

Dr. Julian M. Robinson was also a member of the Danville party which visited White Sulphur Springs.

Dr. Richard Mason, The Plains, Va., was a recent visitor in Waynsboro, Va.

XUM

Dr. J. F. Hubbard, Waynesboro, Va., spent his vacation in the Eastern part of Virginia.

Dr. and Mrs. E. Howe Miller, Danville, Va., spent some time in August at Blowing Rock, N. C.

Dr. and Mrs. Allen T. Hawthorne, Winchester, Va., with a party of friends, returned home the last of August from a motor trip to the New England States.

Dr. A. S. Lilly and family, Richmond, after a motor trip to Athens, W. Va., spent some time at their cottage on the Rappahannock River.

Dr. and Mrs. G. B. Barrow, Clarksville, Va., have been recent visitors at Patrick Springs, Va.

Dr. Susan W. Field, of the State Teacher's College, Farmville, Va., has been visiting at her former home in Lincoln, Nebr.

Dr. H. S. Belt and sons, of South Boston, Va., have been visiting relatives in New York City.

Dr. and Mrs. Giles Cook and sons, of Front Royal, Va., were recent vistors at the country home in Loudoun County, Va., of Dr. and Mrs. Wm. J. Mallory, of Washington, D. C.

Dr. Cornelia Segar, Burkeville, Va., is much improved after undergoing an operation at Johnston-Willis Hospital, Richmond.

Dr. L. H. Hoover, Clarksville, Va., was a recent visitor at Virginia Beach.

Dr. V. B. Hirst, of New York City, has been visiting his former home at Purcellville, Va. Dr. Hirst is an alumnus of the Medical School of the University of Virginia, in the class of '18.

Dr. R. C. Bryan and family, of Richmond, have been visiting in Maryland.

Dr. and Mrs. A. D. Parson and little daughter have returned to their home in Raven, Va., after a visit to relatives in South Boston, Stony Creek, Natural Bridge and Max Meadows, Va.

Dr. Robt. P. Kelly has returned to his home in Lynchburg, Va., after a visit of about ten days to the Chicago Lying-In Hospital.

New City Medical Inspector for Richmond.

Dr. Charles L. Outland, who has been engaged in health work in Greenville, N. C., has been appointed chief medical inspector of the Bureau of Health of Richmond, Va., and assistant to Dr. W. Brownley Foster, director of public welfare, to succeed Dr. B. B. Bagby, resigned.

Dr. Outland is an alumnus of the Medical College of Virginia, in the class of '17, and later served an internship at Johnston-Willis Hospital, this city. He also saw service in the World War. Dr. Outland has taken post-graduate work in public health at both Johns Hopkins and Columbia and comes highly recommended for the position. He enters upon his new duties the first of October.

Changes at St. Christopher's, Norfolk.

St. Christopher's Hospital, Norfolk, Va., is to be discontinued as a hospital and operated as a modernly equipped clinic for the study of general medical and surgical cases. The operating suite and the rooms on one floor will be retained as at present for such cases as do not require prolonged hospitalization. Office cases, cases for study and minor surgical cases will be handled here. Major cases, medical and surgical, will be admitted to one or other of the general hospitals in the city.

Dr. A. B. Hodges who has been associated with Drs. Lomax Gwathmey and Wm. B. Newcomb for the past two years, has purchased Dr. Ruffin's interest in the institution and the clinic will be operated jointly by these three physicians.

Farewell Party for Dr. B. B. Bagby.

Just before Dr. B. B. Bagby's departure for his new field in Athens, Ga., the nursing division of the Richmond Health Bureau gave him a surprise party at his home in Richmond. On their behalf, Dr. W. Brownley Foster, director of Public Welfare, of Richmond, presented Dr. Bagby with a fully equipped traveling bag. Dr. Bagby entered upon his duties as health officer of the city of Athens and Clarke County, Ga., on September 1st.

Doctors Appointed as Delegates.

Governor Byrd appointed Drs. Lawrence T. Price, of Richmond, and William F. Drewry, of Petersburg, among the Virginia delegates to the Atlantic Deeper Waterways' Association, to be held in Richmond, Va., September 14-17.

Continued Decline in Virginia Birth Rate.

The State Bureau of Vital Statistics announces that during the first six months of 1926 there is another decrease in birth rates in Virginia, as compared with the same period during 1925. It seems hardly probable that the decline is due to less complete registration, as the Bureau has been making more strenuous efforts than ever to secure the prompt and accurate registration of births. The "Mother's Certificate," mailed out by the Bureau within about four months after birth of a child, will

now be required for entrance into the public schools, so physicians and midwives are again reminded to turn in certificates of birth promptly.

Dr. A. L. Jones,

For the past few years of Galax, Va., has moved to Lundale, West Virginia, where he is connected with the Lundale Hospital.

Dr. R. L. Shuler,

Formerly of Konnarock, Va., moved to Chilhowie, Va., the first of September.

Dr. H. S. Daniel, Jr.,

Of Louisa, Va., has been elected mayor of that place, to fill the unexpired term of the former mayor who died recently.

Married.

Dr. Wesley Williams, Norfolk, Va., and Miss Stella M. Duke, Washington, D. C., August 5.

Dr. Miletus Brown Jarman, Richmond, Va., and Miss Jeannette Talbott Morris, Gainesville, Fla., June 28. Dr. Jarman, upon graduating from Medical College of Virginia, in 1925, accepted an internship at Memorial Hospital, Richmond.

Dr. Theodore M. Trousdale, Richlands, Va., and Miss Mabelle Lee Mason, Norfolk, July 3.

Dr. Taswell Paul Haney, Jr., Burnsville, Miss., but at present an intern at University Hospital, University, Va., and Miss Dorothy Gentry, of Crozet, Va., July 15.

Dr. Roy L. Noblin,

An alumnus of the Medical College of Virginia, after a year at Stovall, N. C., has moved to Oxford, N. C.

The American Public Health Association

Is to hold its annual meeting in Buffalo, N. Y., October 11-14. One hundred and forty speakers are listed on the program. Programs and information about this meeting may be obtained from the executive secretary, Mr. Homer N. Calver, 370 Seventh Avenue, New York City.

Dr. R. Stuart Van Metre,

An alumnus of the Medical College of Virginia, who has recently been connected with the Logan County Health Department, with headquarters at Logan, W. Va., has located in Huntington, W. Va., with offices in the Library Building.

High Maternity Mortality Rates in the United States.

The Children's Bureau of the U. S. Department of Labor in a report on the prevention of maternal mortality and morbidity throughout the United States, shows that maternal mortality rates in the United States are today among the highest in the civilized world. Puerperal septicemia is the most important single cause of maternal deaths in this country, and this is largely preventable.

Cities show a higher maternal mortality rate than rural districts in the United States, but to some extent this difference is to be accounted for by the fact that many of the more difficult or complicated cases are brought from rural regions to the cities for hospital facilities.

The Bureau has outlined a preventive program, with a view to reducing the high maternity mortality and morbidity rate.

Surgeons in Sons of Confederate Veterans.

Dr. R. L. Mason, Roanoke, Va., and Dr. Charles B. Fox, Monterey, Va., have been appointed surgeon and assistant surgeon, respectively, in the Virginia Division, Sons of Confederate Veterans.

Return from Encampment.

Drs. A. I. Dodson and E. T. Trice, Richmond, and Dr. Ira Hurt, Roanoke, Va., returned to their homes the last of August, after attending the annual encampment of the 246th Coast Artillery, Virginia National Guard.

Dr. Robley R. Goad,

Of the class of '25, Medical College of Virginia, has decided to enter private practice and has located for this purpose at Big Stone Gap, Va.

"Wild Youth" is Not so Wild.

Urging the need of national statistics on juvenile delinquency, the Children's Bureau made public recently a statement summarizing what official figures there are on this subject. These show, contrary to widely published statements, a downward trend in juvenile delinquency rates in large cities. Census reports covering the whole country indicate also,

XUM

the Bureau found, "no significant increase" in the number of children committed to institutions for the more serious offenses—homicide, robbery, burglary.

Of the fourteen cities—New York, Boston, Buffalo, Chicago, New Orleans, Providence, Richmond, St. Louis, Washington, D. C., Rochester, Detroit, Minneapolis, Philadelphia and Seattle, for which the Children's Bureau was able to secure juvenile court statistics, decreased delinquency rates were found in the first named nine cities.

The National Tuberculosis Association

Will be held in Washington, D. C., October 4-7, immediately following the meeting of the International Union Against Tuberculosis, which is scheduled for September 30-October 2. Addresses will be given by a number of distinguished men and women. Special arrangements will be made for interpreting foreign language papers.

The sessions of the National Tuberculosis Association are open to all persons interested; those of the International Union Against Tuberculosis are open only to members.

Further information about either of these meetings may be obtained from the National Tuberculosis Association, 370 Seventh Avenue, New York.

The Wise County Medical Society

Has invited all of the regular doctors in the counties included in the Clinch River Valley district to meet with them on September 22nd, at Norton. This special meeting has been arranged to discuss the feasibility of organizing a society to include all these counties. In addition to the discussions by members, Drs. F. S. Johns and H. U. Stephenson, of Richmond, have been invited to present papers. A subscription dinner will be held in the evening at the country club. Dr. W. B. Barham, Big Stone Gap; is president of the Society, and Dr. C. B. Bowyer, Stonega, secretary.

Virginia Doctors—Take Notice!

In the *Correspondence Department* of this issue appears a letter from Dr. W. A. Plecker, State Registrar of Vital Statistics, which we trust every Virginia doctor may read, on account of its urgent appeal for a compliance with our State law. Apart from this, no true physician wishes to be guilty of a "sin of omission" which may hamper an individual for life. It costs you nothing, but on it may depend much. Won't you read the letter on page 402 now?

Largest U. S. Veterans' Hospital.

The Government last month awarded contract for the largest of its hospitals yet erected. It will contain one thousand beds for neuropsychiatric patients and about thirty-five buildings will comprise the hospital group. The site selected covers about 550 acres about one and one-half miles south of Northport, L. I. Work will begin at once.

Dr. W. Randolph Graham,

An alumnus of the Medical College of Virginia, class of '25, and later resident physician at Johnston Willis Hospital, Richmond, has gone to Boston, Mass. While there, he will be research fellow in medicine at the Peter Bent Brigham Hospital and assistant in medicine at the Harvard Medical School.

Dr. Sun Saves Indian Babies From Rickets.

Although analysis shows Chippewa Indian babies have a higher percentage of physical defects than white children, and that variation between them in the incidence of rickets among the breast-fed babies is slight, in the case of artificially-fed children rickets occurs with twice the frequency among whites as among Indians. This, it is suggested by the Minnesota State Department of Health, is due to the preventive effect of the greater exposure of Indian babies to direct sunlight. Minnesota's Child Hygiene Division has held during the past two years a series of infant and preschool clinics for children of the Minnesota Chippewa Indians, and two Chippewa Indian nurses have been employed to do maternal and infant hygiene nursing.

Dr. W. C. Moomaw,

Petersburg, Va., was recently called to Roanoke, Va., by the death of his brother, Clarence, who died at the Johns Hopkins Hospital, Baltimore.

The Augusta County Medical Association,

At its regular meeting on August 4th, elected the following officers for the ensuing year: President, Dr. H. G. Middlekauff, Weyers Cave; vice-presidents, Drs. George F. Hollar, Waynesboro, C. P. Obenschain, New Hope, and W. M. Phelps, Staunton; secretary, Dr. Charles W. Putney, Staunton; treasurer, Dr. T. M.

Parkins, Staunton. Dr. W. M. Phelps, Staunton, was elected delegate, and Dr. R. S. Griffith, Basic, alternate to represent the Association at the Norfolk meeting of the State Society.

The Association and the King's Daughters' Hospital have combined their libraries and enlarged them recently.

Nurses' Home for Loudoun County Hospital.

Contract has been awarded for a new nurses' home for the Loudoun County Hospital at Leesburg, Va. This will contain a good-sized rest room, ten bed rooms, besides a bath on each floor. The specifications call for a tile stuccoed building which will have many modern features.

Dr. M. A. Johnson,

Roanoke, Va., was elected district governor of the fourth district of the American Business Clubs, at its second annual convention in Roanoke in August.

Dr. Tom A. Williams,

Who left Washington last winter to practice his specialties, neurology and psychiatry, in Florida, is recovering from a fracture of the humerus and has now resumed work at his office in the Exchange Building, Miami, Fla.

Dr. J. E. Richardson,

Leatherwood, Va., is one of the officers of the Henry County, Va., Fair, which opens on September 21.

Dr. Frank Helvestine, Jr.,

For a short time of Danville, Va., has located in Roanoke, Va., with offices at 612-613 MacBain Building. He will limit his practice to surgery, gynecology and obstetrics.

The Arlington County Medical Society,

At its regular meeting held August 4th, appointed Dr. J. H. Walton, Cherrydale, delegate and Dr. H. A. Hornthal, of Potomac, alternate, in the House of Delegates of the Medical Society of Virginia, at its Norfolk meeting.

Dr. J. H. Walton was also appointed to confer with the American Legion in regard to building a hospital in the County. It is stated that a hospital is badly needed and the Society is hopeful that before long plans will be adopted to this end.

Dr. J. Y. Tenpleton,

For some time at Portsmouth, Route 3, Va., has moved to Mooresville, N. C.

Dr. John S. Lawrence,

Of the class of '21, University of Virginia School of Medicine, after special work at the Massachusetts General Hospital, Boston, Mass., has gone to Nashville, Tenn., as resident in medicine at the Vanderbilt Hospital, under Dr. G. Canby Robinson.

Dr. Jacob S. Rosenthal,

Of Norfolk, Va., is at the New York Post-Graduate Medical School and Hospital, New York City, where he is taking a course in cystoscopy, operative urology and regional anesthesia of the genito-urinary tract.

Dr. Andrews in Baltimore.

In July, we stated that Dr. Mallory S. Andrews, for the past year an intern at Norfolk Protestant Hospital, had located for practice in Norfolk. We were incorrectly advised about this as Dr. Andrews states that he accepted an appointment, effective September 1, as an intern in the Johns Hopkins Hospital, Baltimore, Md.

Dr. E. R. Ferguson,

Formerly of Harrisonburg, Va., having finished a residency in eye, ear, and nose and throat work at the New York Polyclinic Medical School and Hospital, New York City, has located in Cleveland, Tenn., to practice his specialty. He is a member of the staff of the Speck Hospital, of that city.

Wanted—

At once, a well trained, active, young physician for a strictly rural practice in Northern Virginia, near Washington, D. C. Could collect $5,000 first year and eventually $10,000 a year. Country and people excellent. Schools very good and churches a plenty. Roads not so good but car can be used year around. Nothing to sell and no capital necessary. In answering, give full description of self and training, mentioning religious, club and fraternal connections in first letter. Address "H," care this journal. (Adv.)

For Sale—

A brand new Douglas-Demoresque-Sluder. Has never been used. Cost $31.00; will sell for $25.00 cash. Address No. 502, care this journal. (Adv.)

Obituary

Dr. William Clayton Orr,

A prominent Loudoun County physician, died at his home in Leesburg, Va., August 29th, after an illness of ten days. He was born in Petersburg, Va., forty-eight years ago and studied medicine at the University College of Medicine, Richmond, from which he took his

XUM

degree in 1900. Following this he served for one year as an interne at the Central State Hospital, Petersburg and then located in Loudoun County. Since locating in Leesburg, twenty-four years ago, Dr. Orr has taken an active part in everything pertaining to the development of that section. He was one of the organizers of the Loudoun County Hospital and had been for a number of years secretary of the Loudoun County Medical Society. He was also a member of the Medical Society of Virginia and of the Medical Society of the District of Columbia, Northern Virginia and Maryland. He was a Shriner and his funeral was held with Masonic honors. His wife and seven children survive him.

Dr. Wirt Peebles Marks,

Well known Surry County physician, died at his home in Claremont, Va., September 2nd, in the fifty-sixth year of his age. His wife and five children survive him. Dr. Marks graduated in medicine from Tulane University, New Orleans, La., in 1891, and had been a member of the Medical Society of Virginia since 1906.

Dr. William Sterling Woody,

Of Hopewell, Va., was drowned in the swimming pool at Dupont Club, City Point, Va., on the night of August 9th, in an effort to save a friend who was apparently overtaken with cramps shortly after entering the pool. Dr. Woody was about thirty-three years of age and graduated from Jefferson Medical College, Philadelphia, in 1919. After serving an internship in Petersburg, Va., he moved to Hopewell and shortly thereafter became a member of the Medical Society of Virginia. His wife and two young children survive him.

Dr. John Bernard Halligan,

Of North Emporia, Va., died August 15th, at the home of his sister in Petersburg, Va. Dr. Halligan, who was forty-eight years of age, graduated from the Medical College of Virginia in 1898 and at once enlisted with the Petersburg Grays for service in the Spanish-American War. He also served with the medical corps during the World War. A daughter and two sisters survive him.

Dr. Robert Eugene Wine,

Of Nokesville, Va., died in Washington, D. C., last March, of chronic nephritis. He was a native of Shenandoah County, Virginia and forty-nine years of age. Dr. Wine received his medical education at the University of the South, in Sewanee, Tenn., from which he graduated in 1899. He was a member of the Medical Society of Virginia, and was at one time a member of the Prince William County, Va., Board of Health.

Tribute of Respect and Affection to Dr. Lankford.

In the tragic death of Dr. Burnley Lankford, the Norfolk County Medical Society records the loss of one of its most beloved and valued members, a faithful and devoted attendant on its meetings. He brought to the scientific and social proceedings of the Society an unbounded optimism and enthusiasm in his search for knowledge. With a mind ever receptive to advances in medicine, his participation in the scientific discussions was ever fruitful and truth seeking.

As former president and at all times an active and constructive member, he made his impress upon the medical life of the community.

Standing always for good feeling and good fellowship, and for close co-operation in the many vital matters constantly confronting the profession and the public, he did much to increase the strength and usefulness of the Society, and to add more and more to its effective work for humanity. His influence, exercised in a quiet and unassuming way, was made doubly effective by the confidence and affection of each member of the Society.

His devotion to duty was exemplified by his cheerful and unremitting work for the wounded in France, a work which did not interest or attract him, and yet one to which he carried such skillful service that he became greatly beloved by those unfortunate and mutilated soldiers, and justly earned the admiration and esteem of his fellow officers.

In his chosen specialty, Obstetrics, he developed a high degree of skill and a justly deserved and wide reputation. He truly loved this work, to the science and practice of which he contributed much. He has also been a definite stimulation to others in the study of these problems.

Dr. Lankford was a member of the Norfolk County Medical Society, the Medical Society of Virginia, the Seaboard Medical Society, the Tri-State Medical Association, the Southside Medical Society and the American Medical Association. He was a fellow of the American College of Surgeons, and a fellow of the American Association of Obstetricians and Gynecologists.

The gap in our ranks his departure leaves will remain unfilled, but the affectionate regard of his fellow members will endure as an evidence of our faith in his high character as a man and as a doctor.

The world, and this community especially, has been made better because Burnley Lankford lived.

He died as he would have chosen, in saving a human life.

SOUTHGATE LEIGH,
Chairman;
LOMAX GWATHMEY,
E. T. HARGRAVE,
C. J. ANDREWS,
Committee.

William Mayo Oppenheimer.

Friends of Dr. and Mrs. St. Julien Oppenheimer, Richmond, Va., will learn with deep regret of the death, by drowning, of their thirteen-year-old son, William Mayo. The accident occurred on September the 6th.